HITACHI

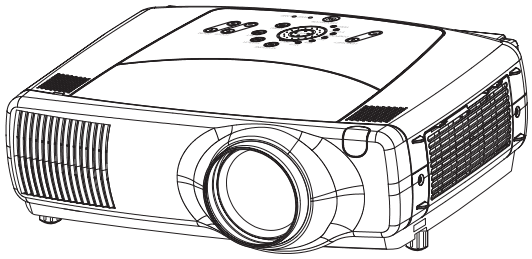
SERVICE MANUAL

SM0542

CP-X1200W(P5XLA)
CP-X1250W(P5XMLA)
CP-X1200WA(P5XMLB)

⚠ Warning

The technical information and parts shown in this manual are not to be used for: the development, design, production, storage or use of nuclear, chemical, biological or missile weapons or other weapons of mass destruction; or military purposes; or purposes that endanger global safety and peace. Moreover, do not sell, give, or export these items, or grant permission for use to parties with such objectives. Forward all inquiries to Hitachi Ltd.



Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Hitachi Multimedia LCD Projector. Be sure to read cautionary items described in the manual to maintain safety before servicing.

Service Warning

1. When replace the lamp, to avoid burns to your fingers. The lamp becomes too hot.
2. Never touch the lamp bulb with a finger or anything else. Never drop it or give it a shock. They may cause bursting of the bulb.
3. This projector is provided with a high voltage circuit for the lamp. Do not touch the electric parts of power unit (main), when turn on the projector.
4. Do not touch the exhaust fan, during operation.
5. The LCD module assembly is likely to be damaged. If replacing to the LCD LENS/PRISM assembly, do not hold the FPC of the LCD module assembly.
6. Use the cables which are included with the projector or specified.

Contents

1. Features ---------- 2
2. Specifications ---------- 2
3. Names of each part ---------- 3
4. Adjustment ---------- 5
5. Troubleshooting ---------- 12
6. Service points ---------- 18
7. Wiring diagram ---------- 29
8. Disassembly diagram ---------- 36
9. Replacement parts list ---------- 39
10. RS-232C communication ---------- 40
11. Block diagram ---------- 50
12. Connector connection diagram ---------- 51
13. Basic circuit diagram ---------- 52

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Multimedia LCD Projector

March 2004 Digital Media Division

CP-X1200(P5XLA) / CP-X1250(P5XMLA) / CP-X1200WA(P5XMLB)

1. Features

- ▶ Ultra high brightness
- ▶ Whisper mode equipped
- ▶ User memory function
- ▶ Partial magnification function
- ▶ Keystone distortion correction
- ▶ Optical lens shift

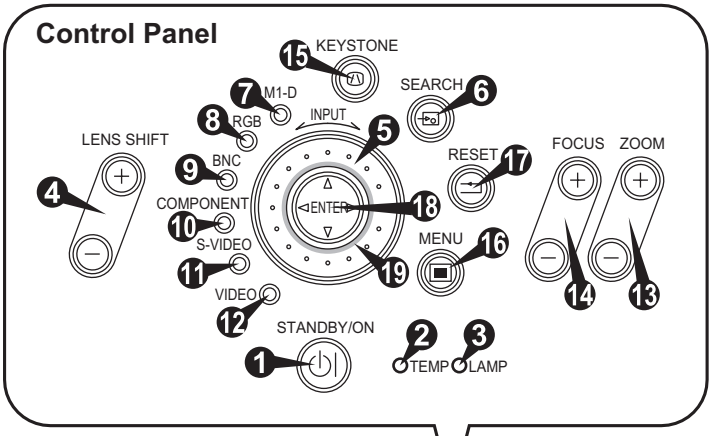
2. Specifications

			CP-X1200	CP-X1250	CP-X1200WA
Liquid Crystal Panel	Drive system		TFT active matrix		
	Panel size		2.5cm (0.99inches)		
	Number of pixels		1024 (H) × 768 (V)		
Lamp			310W		275W
RGB signal input	RGB IN	D-sub 15pin	Video: Analog 0.7Vp-p, 75Ω terminator H/V. sync.: TTL level (positive/negative) Composite sync.: TTL level		
		BNC			
	Digital input	MI-D	Type: T.M.D.S Amplitude differential signal: DC: 150~1200mV AC: 1.56Vp-p		
	AUDIO IN	1	200mVrms, 57kΩ Stereo mini jack		
		2			
Video signal input	COMPOSITE VIDEO	System	NTSC, NTSC4.43, PAL (BGDHI), SECAM, PAL-M, PAL-N, PAL60		
			1.0Vp-p, 75Ω terminator RCA jack		
	S-VIDEO	Y	1.0Vp-p, 75Ω terminator		
		C	0.3Vp-p, 75Ω terminator		
			Mini DIN 4-pin jack		
	COMPONENT VIDEO	System	525i (480i), 525p (480p), 625i (575i), 720p, 1080i		
		Y	1.0Vp-p, 75Ω terminator	RCA jack ×3, BNC ×3	
		C_B/C_R	0.7Vp-p, 75Ω terminator		
		P_B/P_R	0.7Vp-p, 75Ω terminator		
	AUDIO IN	L	200mVrms, 57kΩ (max. 3.0Vp-p) RCA jack ×2		
		R			
Signal output	RGB OUT		Video: Analog 0.7Vp-p, 75Ω output impedance (positive) H/V. sync.: TTL level (positive/negative) Composite sync.: TTL level D-sub 15-pin shrink jack		
	AUDIO OUT		0~200mVrms, output impedance 1kΩ Stereo mini jack		
DC OUT			5V/1A (Power supply for the Wireless unit)		
Speaker output			1.0W + 1.0W(stereo)		
Power supply			AC100~120V / 5.2A , AC220~240V / 2.2A		AC100~120V / 4.7A , AC220~240V / 2.0A
Power consumption			470W		430W
Dimensions			420(W) × 150(H) × 310(D) mm (No including protruding parts)		
Weight			7.7kg (17lbs)		
Temperature			Operation : 0~35°C Storage : -20~60°C		
Accessories			Remote control transmitter × 1 Power cord × 3 RGB cable × 1 AV cable × 1	MI-D cable × 1 Battery × 2 User's manual 1 (with safety instructions) × 1 User's manual 2 (Book or CD-ROM) × 1	

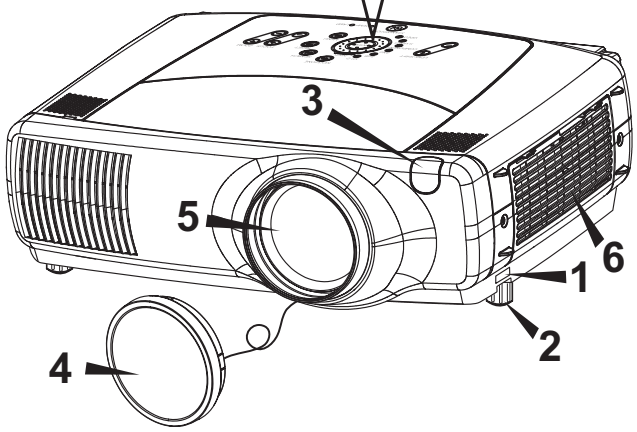
3. Names of each part

● Parts names

Projector

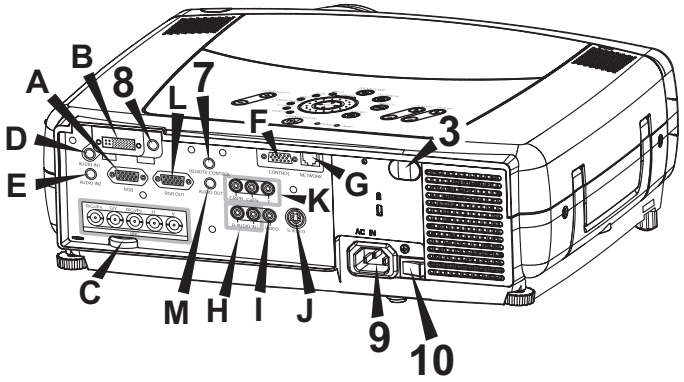


❶ STANDBY/ON button and STANDBY/ON indicator
❷ TEMP indicator
❸ LAMP indicator
❹ LENS SHIFT buttons
❺ INPUT dial
❻ SEARCH button
❼ M1-D indicator
❽ RGB indicator
❾ BNC indicator
❿ COMPONENT indicator
⓫ S-VIDEO indicator
⓬ VIDEO indicator
⓭ ZOOM buttons
⓮ FOCUS buttons
⓯ KEYSTONE button
⓰ MENU button
⓱ RESET button
⓲ ENTER button
⓳ Cursor buttons ▲ / ▼ / ◀ / ▶



1 Elevator button
2 Elevator foot
3 Remote sensor
4 Lens cap
5 Lens
The picture is projected from here.
6 Filter cover
An air filter is inside.

Projector (Front/Right)



A RGB port
B M1-D port
C BNC port
D AUDIO IN 1 port
E AUDIO IN 2 port
F CONTROL port
G NETWORK port
H AUDIO IN R/L port
I VIDEO IN port
J S-VIDEO port
K COMPONENT port
L RGB OUT port
M AUDIO OUT port
7 REMOTE CONTROL port
8 DC OUT port
9 AC Inlet
10 Power switch

Projector (Rear/Left)

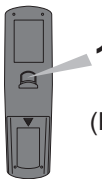
Remote control

1 STANDBY/ON button

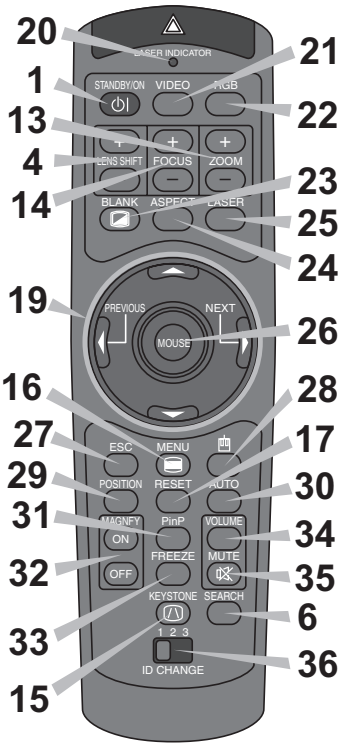
4 LENS SHIFT buttons

6 SEARCH button

13 ZOOM buttons
14 FOCUS buttons
15 KEYSTONE button
16 MENU button
17 RESET button
18 ENTER button
(🖱 Mouse left button)



19 Cursor buttons
▲/▼/◀/▶
(⌨ Keyboard
Arrow keys ↑/↓/←/→)



Remote Control

20 LASER INDICATOR
21 VIDEO button
22 RGB button
23 BLANK button
24 ASPECT button
25 LASER button
26 Cursor buttons ▲/▼/◀/▶
(🖱 Mouse move pointer)
27 ESC button
(⌨ Keyboard ESC key)
28 (🖱 Mouse right button)
29 POSITION button
30 AUTO button
31 PinP button
32 MAGNIFY buttons
33 FREEZE button
34 VOLUME button
35 MUTE button
36 ID CHANGE switch

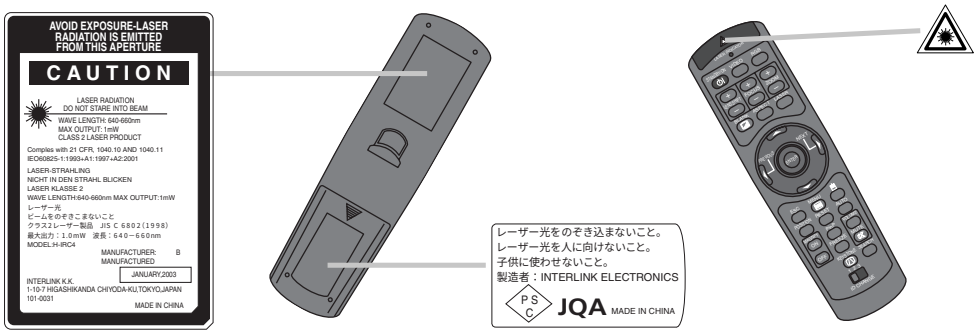
● About the Laser pointer

⚠ WARNING

• The laser pointer of the remote control is used in place of a finger or rod. Never look directly into the laser beam outlet or point the laser beam at other people. The laser beam can cause vision problems.

⚠ CAUTION

• Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



This remote control has a laser pointer in place of a finger or rod. The laser beam works and the LASER INDICATOR lights while the LASER button is pressed.

4. Adjustment

4-1 Before adjusting

4-1-1 Selection of adjustment

When any parts in the table 4-1 are changed, choose the proper adjusting items with the chart.

Table 4-1: Relation between the replaced part and adjustment

Replaced part	Adjustment					
	Ghost (Chap.4-2)	Flicker (Chap.4-3)	NRSH (Chap.4-4)	White balance (Chap.4-5)	Color uniformity (Chap.4-6)	AIR FILTER (Chap.4-7)
Dichroic optics unit	○	△	×	△	△	○
LCD/LENS prism assembly	○	○	○	○	○	△
PWB assembly Drive	○	○	○	○	○	○
Lamp unit assembly	△	△	×	△	△	×
PWB assembly Dust sensor	×	×	×	×	×	○

○ : means need for adjustment. × : means not need for djustment.
△ : means recommended.

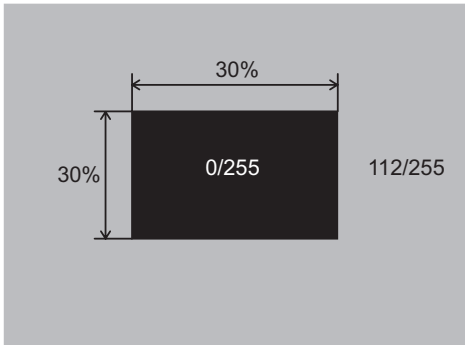
4-1-2 Setting of condition before adjustment

1. Before starting adjustment, warm up the projector for about 10 minutes.(Blank white)
2. Set Zoom Wide to Max. And project an image with more than 1m (40 inches) in diagonal size.
3. Shift the Lens to the highest position with the [LENS SHIFT +] button.
4. Normalizing the video adjustment.
   (Press the [MENU] button of the Remote control transmitter to display the MAIN menu. After pressing the [▶] key, use the [▲] or [▼] key to select [RESET]. Reset menu will appear by the [▶] key, then choose [EXECUTE]. Next, open the PICTURE1 menu. Choose RESET and perfom EXECUTE by the same operation described above.

   *note :The MAIN and PICTURE1 menu is not reset with no signal.
5. Set the NORMAL at GAMMA in the PICTURE1 menu.
6. Perform all adjustments from the FACTORY MENU. Perform the following operations to display the FACTORY MENU.
   a. Press the [MENU] button on the Remote control transmitter (the MAIN menu will appear).
   b. Select the [RESET] in the MAIN menu, and then press the [▶] button.
   c. Next, press the [RESET] button one time. And hold the [RESET] button for 3 seconds or more (the FACTORY MENU will appear).

4-2 Ghost adjustment

Signals for internal adjustment

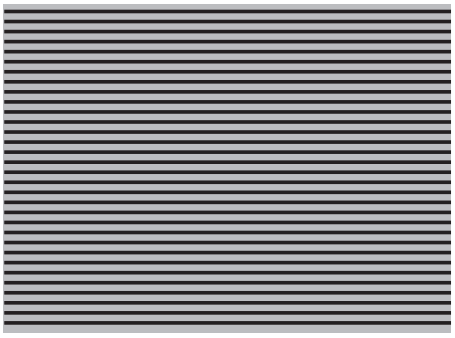


Adjustment procedure

1. Use DAC-P - GHOST - R: in the FACTORY MENU to adjust so that R color ghost is at a minimum.
   (Set the adjustment value to default, and then raise the value. When a ghost appears to the left of a vertical line, reduce the value by some steps as below.)
   CP-X1200/CP-X1250: 2 steps
   CP-X1200WA: 4 steps
2. In the same way, use DAC-P - GHOST-G: in the FACTORY MENU to adjust so that G color ghost is at a minimum.
3. In the same way, use DAC-P - GHOST-B: in the FACTORY MENU to adjust so that B color ghost is at a minimum.

4-3 Flicker adjustment (V.COM adjustment)

Signals for internal adjustment

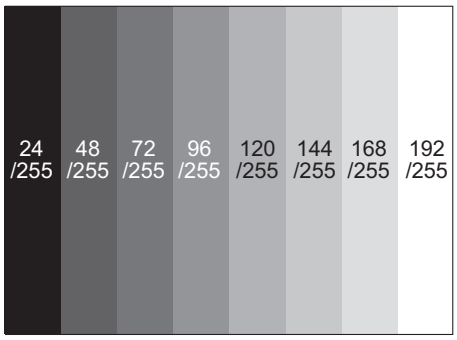


Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-2 Ghost adjustment.
2. Use DAC-P - V.COM - R: in the FACTORY MENU to adjust so that the flicker at the center of the screen is less than the flicker at the periphery.
   (When the flicker is about the same across the whole screen, adjust so that the flicker at the center of the screen is somewhat less than elsewhere.)
3. In the same way, use DAC-P - V.COM-G: in the FACTORY MENU to adjust the G color flicker.
4. In the same way, use DAC-P - V.COM-B: in the FACTORY MENU to adjust the B color flicker.

4-4 NRSH adjustment (vertical stripe adjustment)

Signals for internal adjustment



Adjustment procedure

1. Make this adjustment after completing the adjustment in 4-3 Flicker adjustment.
2. Use DAC-P - NRSH - R: in the FACTORY MENU to adjust so that the vertical lines spaced every 6 dots are as inconspicuous as possible.
   (Reduce the adjustment value when black stripes appear in the 2nd or 3rd tone from the black side. Note that when the adjustment value is lowered, white stripes may appear in the 2nd or 3rd tone from the bright side. Should this happen, adjust so that the stripes are as inconspicuous as possible.)
3. In the same way, use DAC-P - NRSH - G: in the FACTORY MENU to adjust vertical stripes of G color.
4. In the same way, use DAC-P - NRSH - B: in the FACTORY MENU to adjust vertical stripes of B color.
5. After completing this adjustment, return to Flicker adjustment in 4-3 and make sure NRSH adjustment has not affected Flicker performance. If it has become worse, readjust the Ficker and the NRSH adjustments.

4-5 White balance adjustment (visual inspection)

Preparations

1. Perform these adjustments after the NRSH adjustment described in Section 4-4.
2. Reset gamma correction before adjustment.
   - Place the cursor on [GAMMA] in the FACTORY MENU, press the [RESET] key and select [DEFAULT].

Adjustment procedure

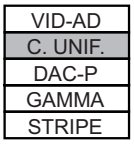
1. First, adjust the G color.
2. Select GAMMA, SB-CNT, and G: in the FACTORY MENU. If the background is white solid, press the [ENTER] key on the Remote control transmitter to change to [G] monochrome in the 29-tone grayscale.
3. Adjust GAMMA, SB-CNT, and G: in the FACTORY MENU so that brightness of 29 steps is best.
4. Don't adjust GAMMA, SB-BRT, and G: in the FACTORY MENU. Because we want to keep the best contrast ratio.
5. Then adjust colors R and B.
6. Select GAMMA, SB-CNT, and G: in the FACTORY MENU. If the background is white solid, press the [ENTER] key on the Remote control trasmitter to change to [W] monochrome in the 29-tone grayscale.
7. Adjust GAMMA, SB-BRT, R: and B: in the FACTORY MENU so that low-brigtness white balance is best.
8. Adjust GAMMA, SB-CNT, R: and B: in the FACTORY MENU so that middle-brightness white balance is best.
9. Repeat steps 7 to 8 above, and adjust so that brightness white balance of 29 steps is best.

4-6 Color uniformity adjustment

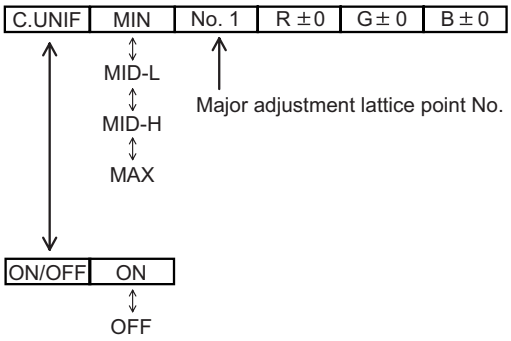
Preparations

1. Perform these adjustments after the white balance adjustment described in Section 4-5.
2. Make a color uniformity adjustment for the following four tones.
   - MIN tone (approx. 7% input signal)
   - MID-L tone (approx. 18% input signal)
   - MID-H tone (approx. 50% input signal)
   - MAX tone (approx. 75% input signal)
3. Place the cursor on [C.UNIF.] in the FACTORY MENU and press the [▶] key. This displays the Adjust Tone menu at the bottom of the screen.
   To choose the tone to be adjusted, press the [▶] key and then use the [▲] or [▼] key.
   Select the major adjustment lattice point No. and color, and then adjust them.
4. The major adjustment lattice point numbers (a total of 17 points) corresponds to the major adjustment lattice point positions in the diagram on the right. The color uniformity of the entire screen can be adjusted by adjusting the white balance for each of the points starting in order from the low numbers.
5. Adjustment point No.1 should not be adjusted, because it controls the brightness of the entire screen.
6. To temporarily turn correction off, place the cursor on [C.UNIF.] in the Adjust Tone menu and press the [▼] key. The ON/OFF menu appears. Place the cursor on [ON] with the [▶] key and press the [▼] key. To turn it on again, place the cursor on [OFF] and press the [▲] key.
7. Although this adjustment can also be made using internal signals, we will here use the [ENTER] key on the Remote control transmitter to select the following two signals.
   - Solid monochrome adjustment color (use G color adjustment when a color differential meter is used).
   - Solid white (use for adjustment other than above).
8. Reset color-shading correction before adjustment.
   - When 4 tones and all colors are to be reset, place the cursor on [C.UNIF.] in the FACTORY MENU, press the [RESET] key and select [DEFAULT].
   - When only 1 tone is to be reset, place the cursor on the tone to be reset, press the [RESET] key and select [DEFAULT].
   - Single tone and monochrome resets cannot be performed.

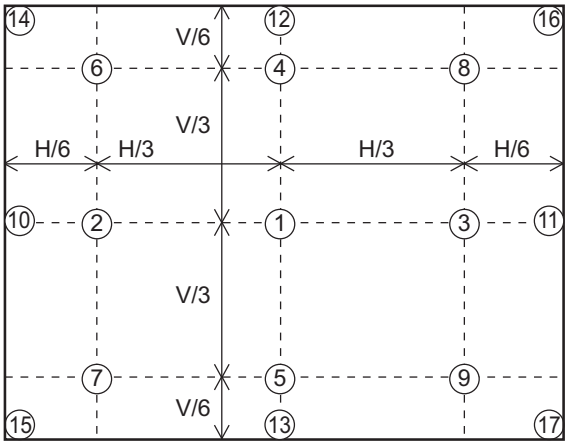
FACTORY MENU



Adjust tone menu



Major adjustment lattice point position



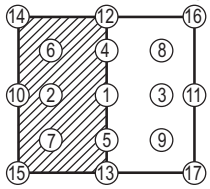
Adjustment procedure 1
(when a color differential meter is used)

1. First adjust [MID-L] tone [G:].
2. Select adjustment point [No.2][G:].
   When the background is not [G] monochrome, press the [ENTER] key on the Remote control transmitter to change to solid [G] monochrome.
3. Measure the illumination at adjustment points No. 2, No.3, No.10 and No.11.
   The values should be:
   No.2 = Y2 [lx] No.10 = Y10 [lx]
   No.3 = Y3 [lx] No.11 = Y11 [lx]
4. No.2 and No.3 adjustment point have the average of Y2 and Y3.
   Y2 = (Y2 + Y3) / 2 ± 3 [%]
   Y3 = (Y2 + Y3) / 2 ± 3 [%]
5. No.10 and No.11 adjustment point have the average of Y10 and Y11.
   Y10 = (Y10 + Y11) / 2 ± 3 [%]
   Y11 = (Y10 + Y11) / 2 ± 3 [%]
6. Then adjust [MID-L] tone [R] and [B].
   When the background is [G] monochrome, press the [ENTER] key on the Remote control transmitter to change to solid white.
7. Measure the color coordinates of adjustment point [No.1] and make a note of them.
   Assume that they are x = x1, y = y1.
   Note: When the CL-100 color and color difference meter is used, the [△](delta) mode is convenient. When adjustment point [No.1] color coordinate has been selected, set the slide switch on the side to [△](delta) while holding down the [F] button on the front panel. The measurement shown after this displays the deviation from measurement point 1.
8. Measure the color coordinates of measurement point [No.2] and adjust [No.2][R:] and [B:] so that the coordinates are as follows.
   x = x1 ± 0.005 , y = y1 ± 0.010
9. Similarly, measure adjustment points [No.3] to [No.17] and adjust their color coordinates starting in order from the small number points.
   This completes adjustments required for [MIN].
   Note: Since excessive correction may lead to a correction data overview during internal calculations, use the following values for reference.
   [No.2] to [No.5] ± 40 or less
   [No.6] to [No.9] ± 50 or less
   [No.10] to [No.13] ± 70 or less
   [No.14] to [No.17] ± 120 or less
10. Then adjust [MIN] tone [G] so that the adjustment data set two times as much as [MID-L] tone [G].
    This completes [G] color adjustments.
11. Then adjust [MIN] tone [R] and [B].
    Select [No.2] [B:] and press the [ENTER] key on the Remote control transmitter to change to solid white.
12. Measure the color coordinates of adjustment point [No.1] and make a note of them.
    Assume that they are x = x1, y = y1.
13. Now measure the color coordinates of measurement point [No.2] and adjust [No.2][R:] and [B:] so that the coordinates are as follows.
    x = x1 ± 0.005 , y = y1 ± 0.010 (Target)
    x = x1 ± 0.020 , y = y1 ± 0.040
14. Similarly, measure adjustment points [No.3] to [No.17] and adjust their color coordinates starting in order from the small number points.
    This completes [MIN] tone adjustments.
15. Now make similar adjustments for [MID-H] tone.
    (Adjust [MID-H] tone [G] so that the adjustment data set half as many as [MID-L] tone [G].)
16. Now make similar adjustments for [MAX] tone.
    (Adjust [MAX] tone [G] so that the adjustment data set half as many as [MID-L] tone [G].)

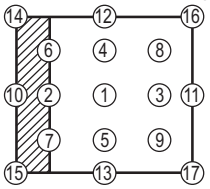
Adjustment procedure 2
(visual inspection)

1. First adjust [MIN] tone [G:].
2. Select [No.2] [G:].
   If the background is [G] monochrome, press the [ENTER] key on the Remote control transmitter to change to solid white.
3. View measurement point [No.2] and [No.3].
   Lower the [G] color intensity only of the color point whose [G] color is more intense than measurement point [No.1].
4. View measurement point [No.10] and [No.11].
   Lower the [G] color intensity only of the color point whose [G] color is more intense than measurement point [No.1], and raise the intensity of the point whose color intensity is lower than measurement point [No.1].
5. Now adjust the [MIN] tone for colors [R] and [B].
6. View measurement points [No.2], [No.3], [No.10] and [No.11]. Adjust the [R] and [B] of each measurement point so that they have the same color as measurement point [No.1].
   Adjustment technique:
   First, adjust [B:] of the point whose color is to be adjusted so that it approximates that of [No.1]. If [R:] is low at this time, the image will have cyan cast, in which case [R:] is increased. On the other hand, if [R:] is excessive, the image will have a magenta cast, in which case [R:] is decreased.
   Overall, a cyan cast makes it easy to see color shading.
7. Next, view measurement points [No.4], [No.5], [No.12], [No.13] and make similar adjustments.
8. Then adjust measurement points [No.6], [No.7], [No.8], [No.9], [No.14], [No.15], [No.16] and [No.17].
   This completes the [MIN] tone adjustments.
9. Make similar another three tones as described in steps 1 to 8 above.

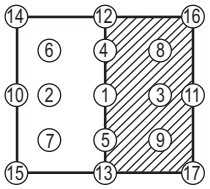
No. 2 deviation range



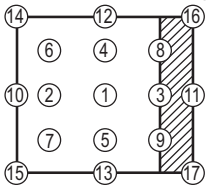
No. 10 deviation range



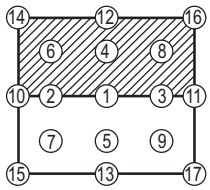
No. 3 deviation range



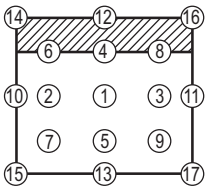
No. 11 deviation range



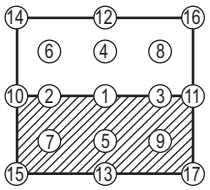
No. 4 deviation range



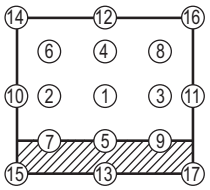
No. 12 deviation range



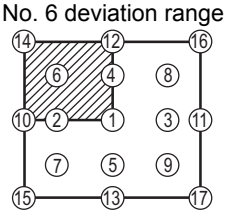
No. 5 deviation range



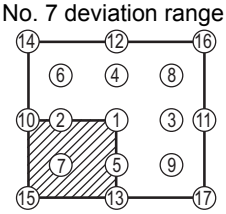
No. 13 deviation range



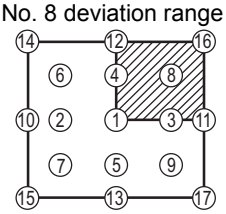
No. 6 deviation range



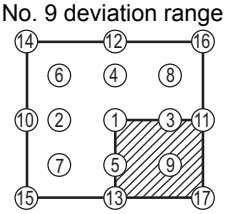
No. 7 deviation range



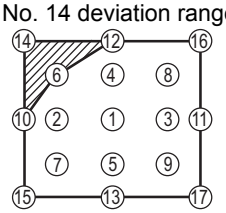
No. 8 deviation range



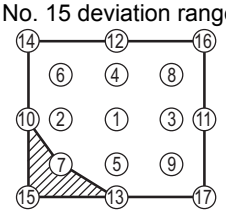
No. 9 deviation range



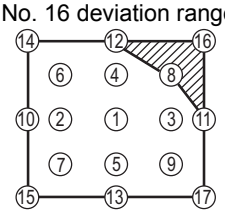
No. 14 deviation range



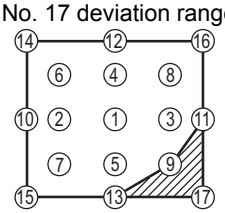
No. 15 deviation range



No. 16 deviation range



No. 17 deviation range



4-7 AIR-SENSOR adjustment

When the PWB assembly DRIVE or the PWB assembly DUST SENSOR is replaced, perform this adjustment after completing reassembling the projector.

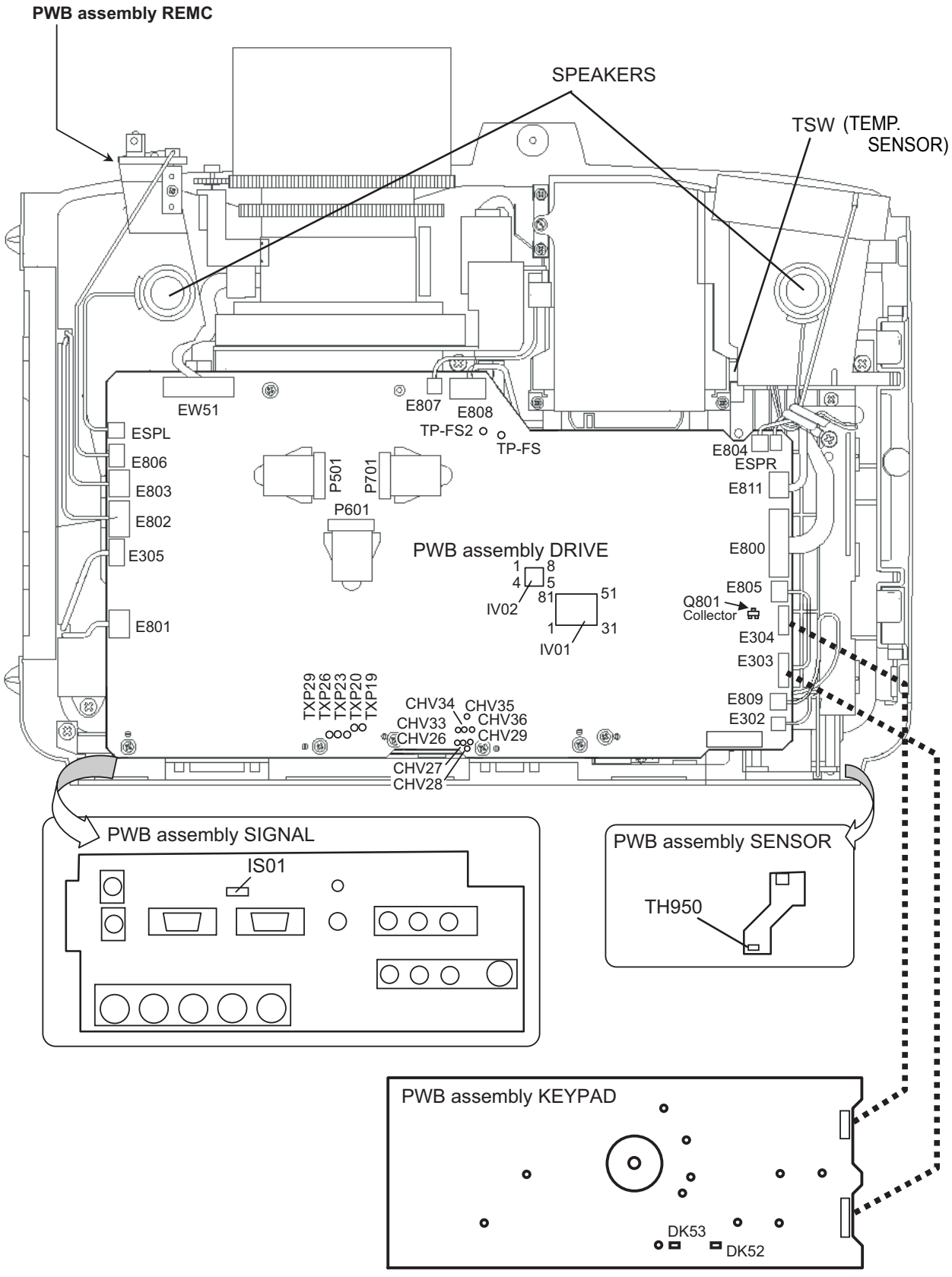
1. Before this adjustment, clean the air filter and make sure the projector is compretely assembled.
2. Open HIDDEN SERVICE MENU and choose AIR-SENSOR by using ▼ button.
   HIDDEN SERVICE menu comes up by following operation. Set the cursor on the OPTION menu and press the MAGNIFY OFF button on the Remote controller. Next hold the MAGNIFY OFF button for 3 seconds or more.
3. Press the ▶ button. Next press the [▲] button to select EXECUTE. The adjustment program runs automatically.
4. After the massage of "END" is displayed, check the Offset value displayed according to the following spec
   Spec. : 10 ≦ Offset: ≦ 65
5. If out of spec, confirm the below conditions Then retry the same adjustment.

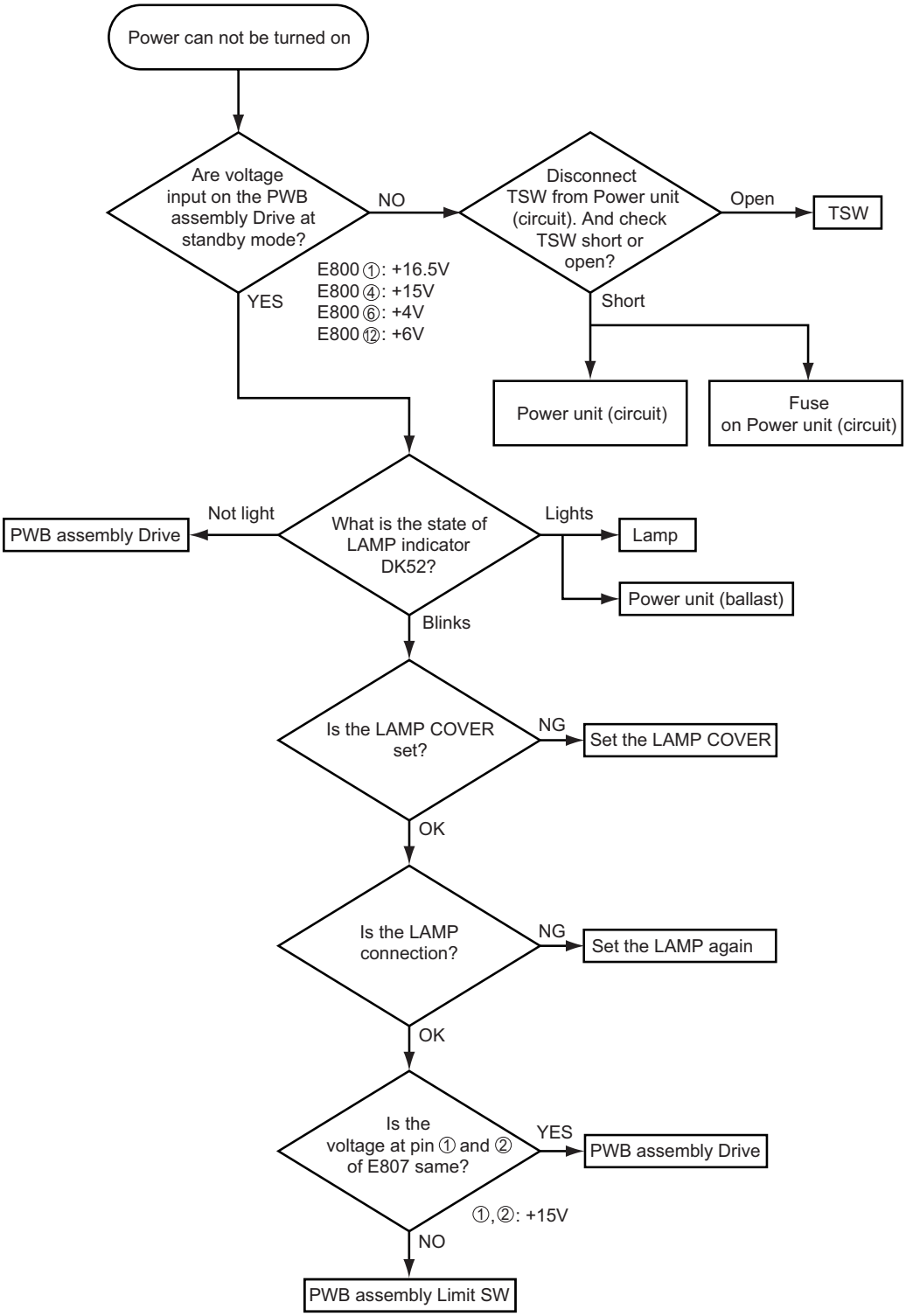
	Description
(a)	Installing the air filter correctly.
(b)	No obstruction and dust on air filter. (If not good condition, clean or replace the air filter.)
(c)	Using the proper type of air filter.
(d)	Installing the PWB assembly DUST SENSOR correctly.
(e)	Connecting the proper wires to E305 firmly.
(f)	Installing the FILTER COVER correctly.

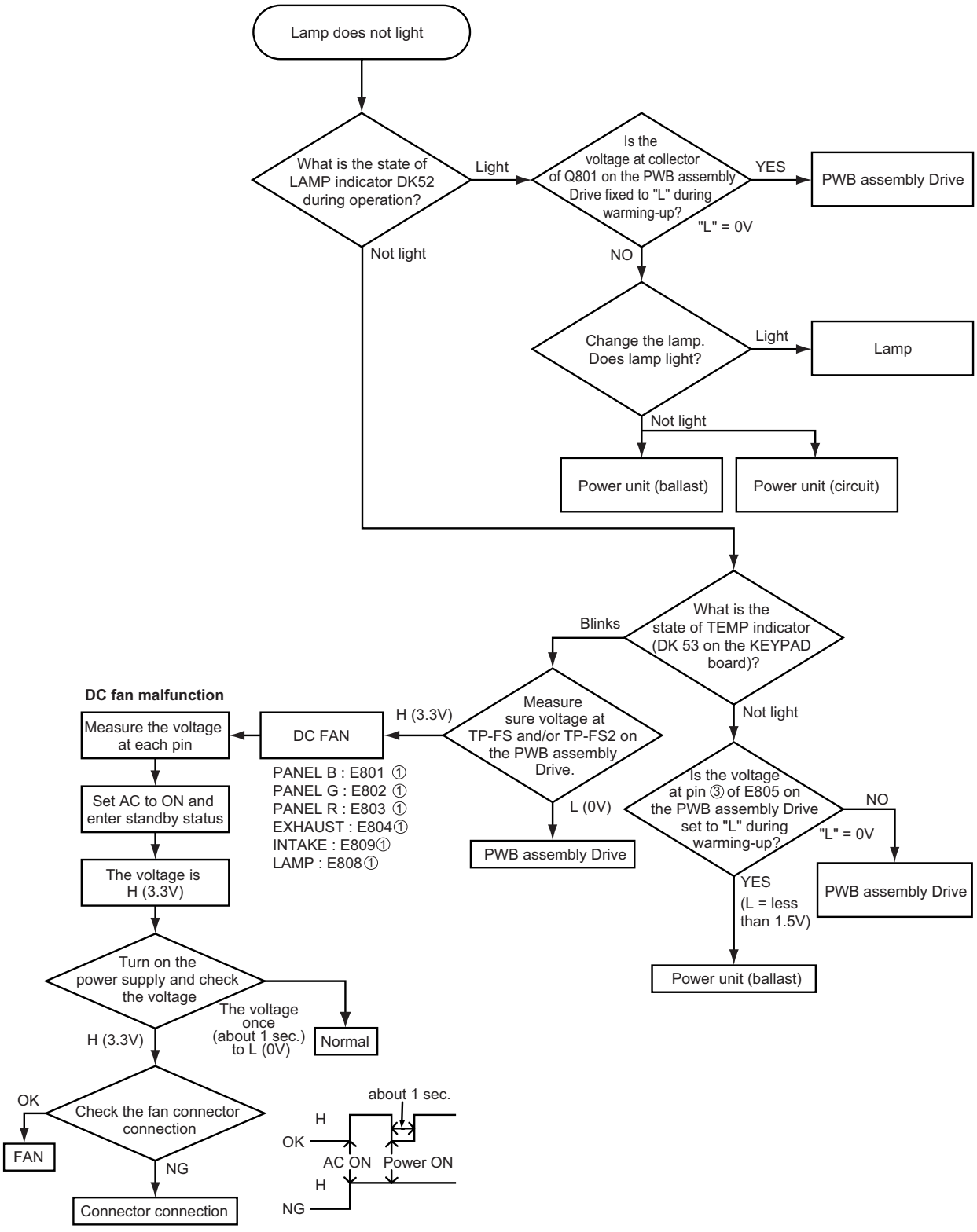
6. If the all conditions above is okay, replace the PWB assembly Drive or the PWB assembly Dust sensor.

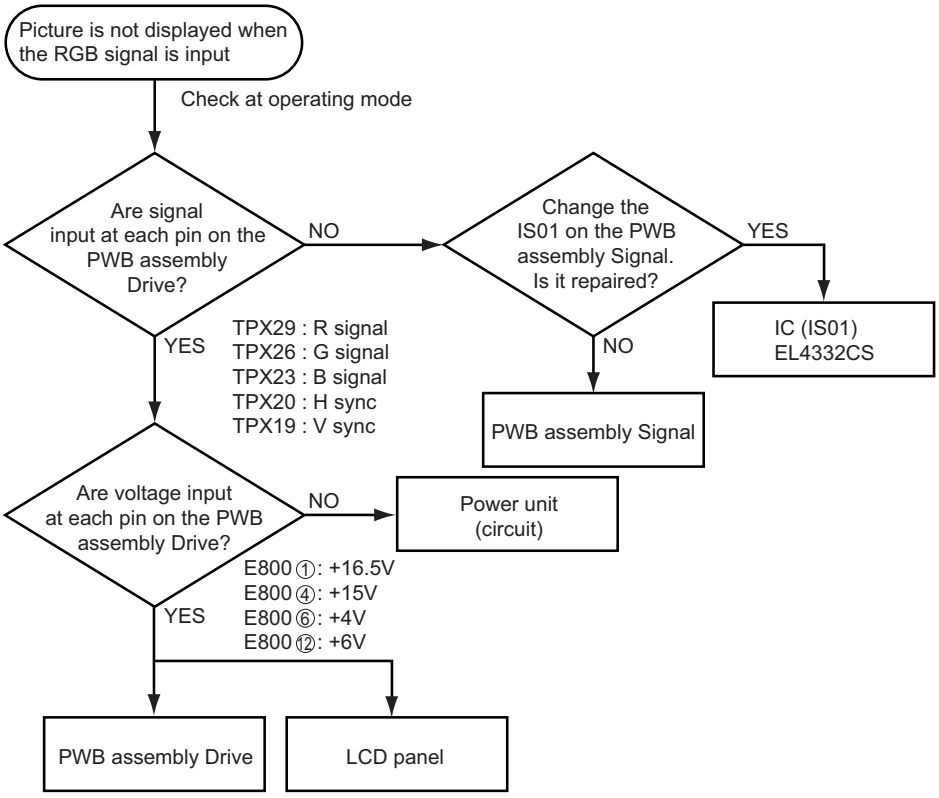
5. Troubleshooting

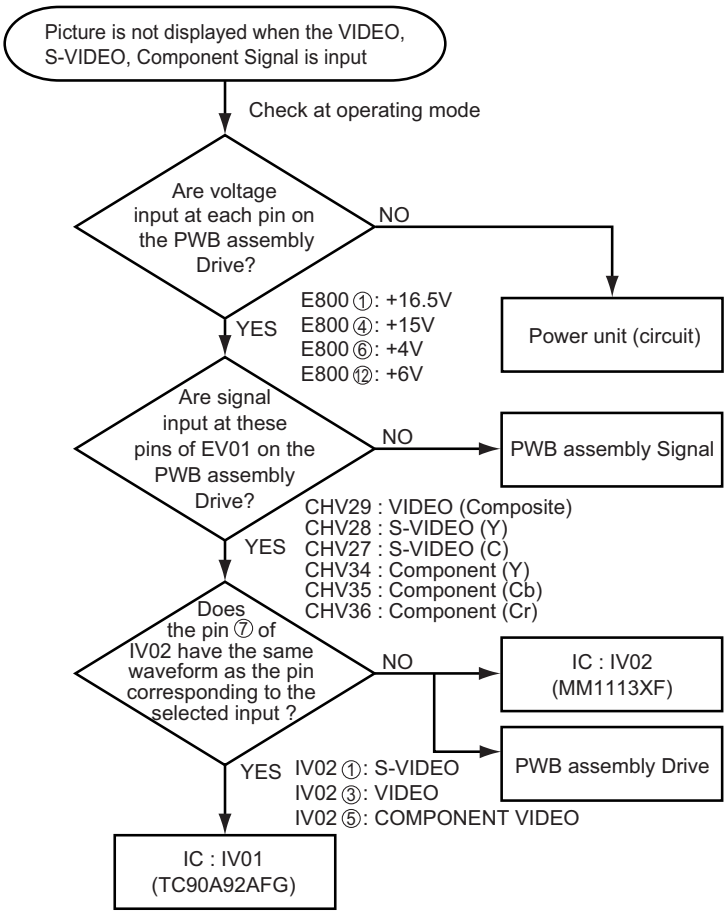
Check points

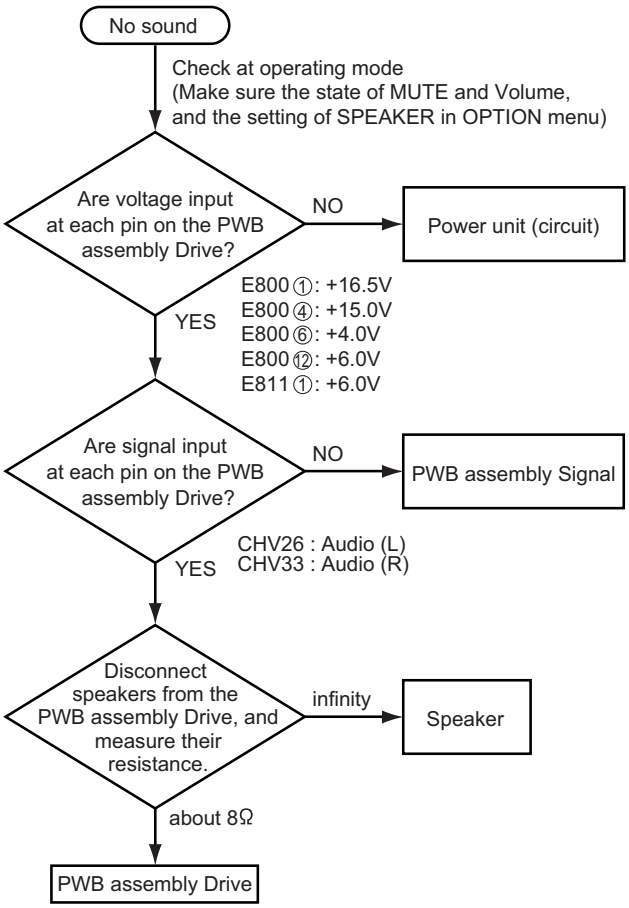


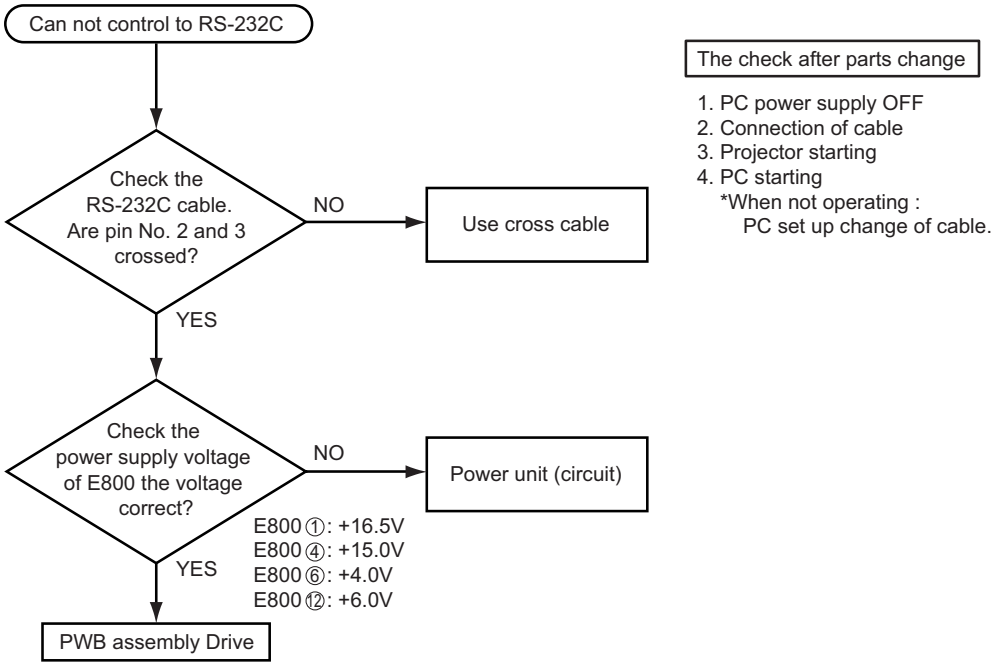

Power can not be turned on
Are voltage input on the PWB assembly Drive at standby mode?
NO
Disconnect TSW from Power unit (circuit). And check TSW short or open?
Open
TSW
E800 ①: +16.5V
E800 ④: +15V
E800 ⑥: +4V
E800 ⑫: +6V
YES
Short
Power unit (circuit)
Fuse on Power unit (circuit)
What is the state of LAMP indicator DK52?
Not light
PWB assembly Drive
Lights
Lamp
Power unit (ballast)
Blinks
Is the LAMP COVER set?
NG
Set the LAMP COVER
OK
Is the LAMP connection?
NG
Set the LAMP again
OK
Is the voltage at pin ① and ② of E807 same?
YES
PWB assembly Drive
①,②: +15V
NO
PWB assembly Limit SW

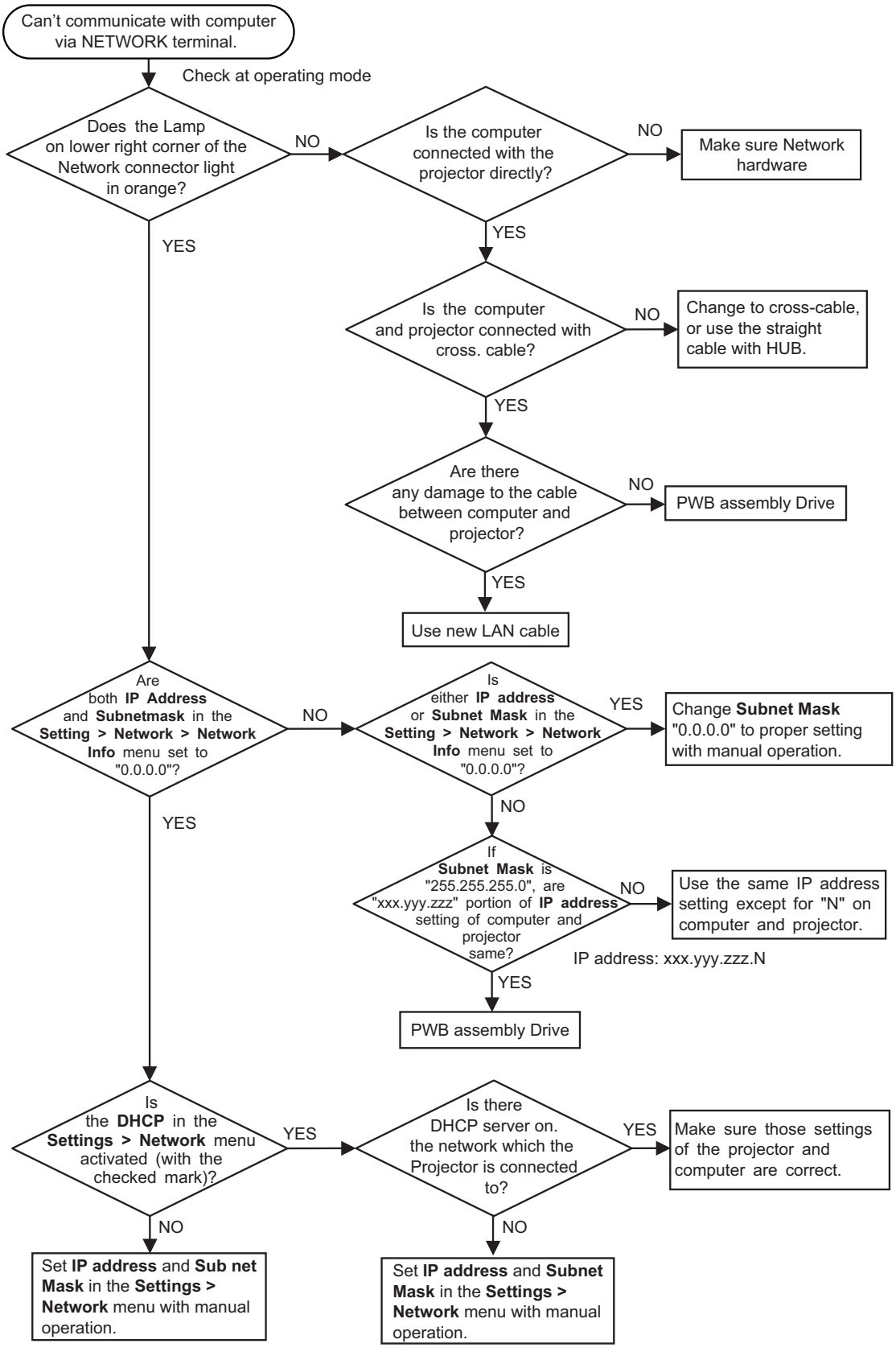

Lamp does not light
What is the state of LAMP indicator DK52 during operation?
Light
Is the voltage at collector of Q801 on the PWB assembly Drive fixed to "L" during warming-up?
YES
PWB assembly Drive
"L" = 0V
NO
Not light
Change the lamp. Does lamp light?
Light
Lamp
Not light
Power unit (ballast)
Power unit (circuit)
What is the state of TEMP indicator (DK 53 on the KEYPAD board)?
Blinks
Not light
Measure sure voltage at TP-FS and/or TP-FS2 on the PWB assembly Drive.
H (3.3V)
L (0V)
PWB assembly Drive
DC FAN
PANEL B : E801 ①
PANEL G : E802 ①
PANEL R : E803 ①
EXHAUST : E804①
INTAKE : E809①
LAMP : E808①
DC fan malfunction
Measure the voltage at each pin
Set AC to ON and enter standby status
The voltage is H (3.3V)
Turn on the power supply and check the voltage
The voltage once (about 1 sec.) to L (0V)
Normal
H (3.3V)
OK
Check the fan connector connection
FAN
NG
Connector connection
Is the voltage at pin ③ of E805 on the PWB assembly Drive set to "L" during warming-up?
NO
"L" = 0V
PWB assembly Drive
YES
(L = less than 1.5V)
Power unit (ballast)
about 1 sec.
H
OK
AC ON
Power ON
H
NG


Picture is not displayed when the RGB signal is input
Check at operating mode
Are signal input at each pin on the PWB assembly Drive?
NO
Change the IS01 on the PWB assembly Signal. Is it repaired?
YES
IC (IS01) EL4332CS
NO
PWB assembly Signal
YES
TPX29 : R signal
TPX26 : G signal
TPX23 : B signal
TPX20 : H sync
TPX19 : V sync
Are voltage input at each pin on the PWB assembly Drive?
NO
Power unit (circuit)
E800 ①: +16.5V
E800 ④: +15V
E800 ⑥: +4V
E800 ⑫: +6V
YES
PWB assembly Drive
LCD panel


Picture is not displayed when the VIDEO, S-VIDEO, Component Signal is input
Check at operating mode
Are voltage input at each pin on the PWB assembly Drive?
NO
Power unit (circuit)
E800 ①: +16.5V
E800 ④: +15V
E800 ⑥: +4V
E800 ⑫: +6V
YES
Are signal input at these pins of EV01 on the PWB assembly Drive?
NO
PWB assembly Signal
CHV29 : VIDEO (Composite)
CHV28 : S-VIDEO (Y)
CHV27 : S-VIDEO (C)
CHV34 : Component (Y)
CHV35 : Component (Cb)
CHV36 : Component (Cr)
YES
Does the pin ⑦ of IV02 have the same waveform as the pin corresponding to the selected input ?
NO
IC : IV02 (MM1113XF)
PWB assembly Drive
YES
IV02 ①: S-VIDEO
IV02 ③: VIDEO
IV02 ⑤: COMPONENT VIDEO
IC : IV01 (TC90A92AFG)


No sound
Check at operating mode
(Make sure the state of MUTE and Volume,
and the setting of SPEAKER in OPTION menu)
Are voltage input
at each pin on the PWB
assembly Drive?
NO
Power unit (circuit)
YES
E800 ①: +16.5V
E800 ④: +15.0V
E800 ⑥: +4.0V
E800 ⑫: +6.0V
E811 ①: +6.0V
Are signal input
at each pin on the PWB
assembly Drive?
NO
PWB assembly Signal
YES
CHV26 : Audio (L)
CHV33 : Audio (R)
Disconnect
speakers from the
PWB assembly Drive, and
measure their
resistance.
infinity
Speaker
about 8Ω
PWB assembly Drive


Can not control to RS-232C
Check the
RS-232C cable.
Are pin No. 2 and 3
crossed?
NO
Use cross cable
YES
Check the
power supply voltage
of E800 the voltage
correct?
NO
Power unit (circuit)
E800 ①: +16.5V
E800 ④: +15.0V
E800 ⑥: +4.0V
E800 ⑫: +6.0V
YES
PWB assembly Drive
The check after parts change
1. PC power supply OFF
2. Connection of cable
3. Projector starting
4. PC starting
*When not operating :
PC set up change of cable.


Can't communicate with computer via NETWORK terminal.
Check at operating mode
Does the Lamp on lower right corner of the Network connector light in orange?
NO
Is the computer connected with the projector directly?
NO
Make sure Network hardware
YES
YES
Is the computer and projector connected with cross. cable?
NO
Change to cross-cable, or use the straight cable with HUB.
YES
Are there any damage to the cable between computer and projector?
NO
PWB assembly Drive
YES
Use new LAN cable
Are both IP Address and Subnetmask in the Setting > Network > Network Info menu set to "0.0.0.0"?
NO
Is either IP address or Subnet Mask in the Setting > Network > Network Info menu set to "0.0.0.0"?
YES
Change Subnet Mask "0.0.0.0" to proper setting with manual operation.
YES
NO
If Subnet Mask is "255.255.255.0", are "xxx.yyy.zzz" portion of IP address setting of computer and projector same?
NO
Use the same IP address setting except for "N" on computer and projector.
IP address: xxx.yyy.zzz.N
YES
PWB assembly Drive
Is the DHCP in the Settings > Network menu activated (with the checked mark)?
YES
Is there DHCP server on. the network which the Projector is connected to?
YES
Make sure those settings of the projector and computer are correct.
NO
NO
Set IP address and Sub net Mask in the Settings > Network menu with manual operation.
Set IP address and Subnet Mask in the Settings > Network menu with manual operation.

6. Service points

6-1 Lead free solder [CAUTION]

This product uses lead free solder (unleaded) to help preserve the environment. Please read these instructions before attempting any soldering work.

⚠ CAUTION
Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead free solder can splatter at high temperatures (600˚C).

■ Lead free solder indicator

Printed circuit boards using lead free solder are engraved with an "F."

■ Properties of lead free solder

The melting point of lead free solder is 40-50˚C higher than leaded solder.

■ Servicing solder

Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended.
Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

Precautions when using leaded solder

- Remove all lead free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead free solder has been completely melted (do not apply the soldering iron without solder).

■ Servicing soldering iron

A soldering iron with a temperature setting capability (temperature control function) is recommended.
The melting point of lead free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

Recommended soldering iron:

- Soldering iron with temperature control function (temperature range: 320-450˚C)

Recommended temperature range per part:

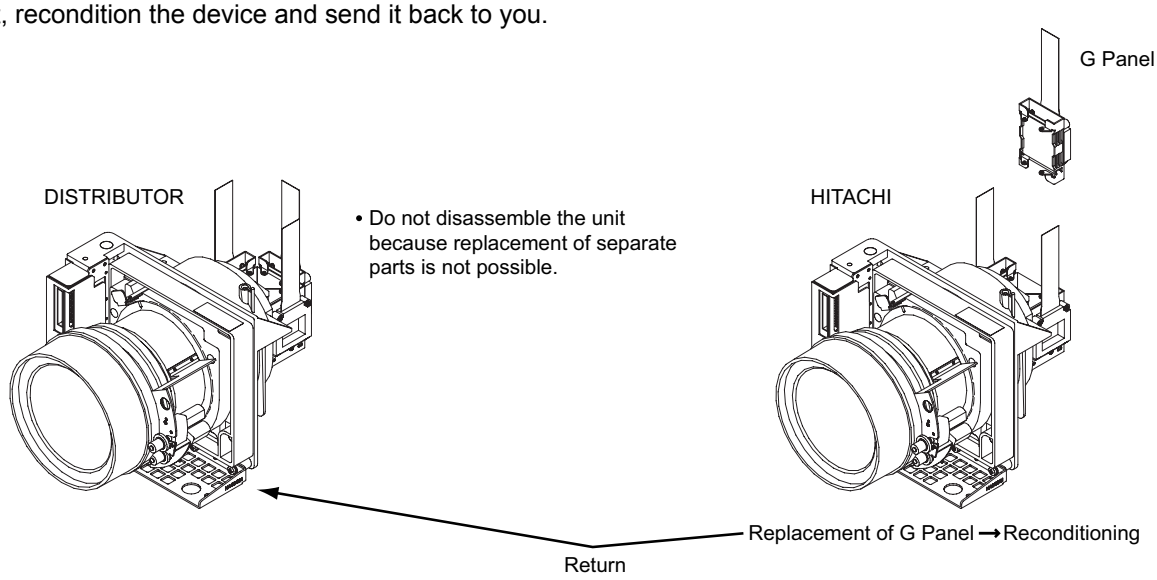
Part	Soldering iron temperature
Mounting (chips) on mounted PCB	320˚C±30˚C
Mounting (chips) on empty PCB	380˚C±30˚C
Chassis, metallic shield, etc.	420˚C±30˚C

The PWB assembly which has used lead free solder

① PWB assembly DRIVE
② PWB assembly SENSOR
③ PWB assembly REMC
④ PWB assembly LIMIT SW
⑤ PWB assembly SIGNAL
⑥ PWB assembly DUST SENSOR
⑦ PWB assembly KEYPAD
⑧ POWER UNIT (BALLAST)
⑨ POWER UNIT (CIRCUIT)

6-2 Before replacing the LCD/Lens prism

You should not replace separately the parts of the liquid crystal LCD/Lens prism because it works properly only when used together. Therefore, regarding these parts, you can either replace part, LCD/LENS PRISM assembly, or send the whole unit LCD/LENS PRISM assembly back to HITACHI, where we will replace the malfunctioning part, recondition the device and send it back to you.

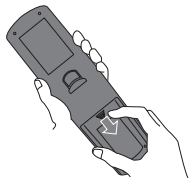

G Panel
DISTRIBUTOR
• Do not disassemble the unit because replacement of separate parts is not possible.
HITACHI
Replacement of G Panel → Reconditioning
Return

6-3 Putting batteries

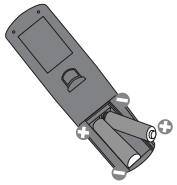
⚠ CAUTION

- About the battery
- Keep a battery away from children and pets.
- Use only the battery specified: two AA batteries.
- Do not mix new battery with used one.
- Make sure the plus and minus terminals are correctly aligned when loading the battery (as indicated in the remote control).
- Dispose of batteries in accord with environmental laws.

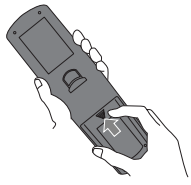
1. Remove the battery cover.
   Slide back and remove the battery cover in the direction of the arrow.



2. Insert the batteries.
   Align and insert the two AA batteries according to their plus minus terminals (as indicated in the remote control).



3. Close the battery cover.
   Replace the battery cover in the direction of the arrow and snap it back into place.



6-4 Air filter

⚠ WARNING
• Please carefully read the “User’s Manual - Safety Guide. • Before caring, make sure the power switch is off and the power cable is not plugged in, then wait at least 45 minutes for the lamp to cool sufficiently. • Use only the air filter of the specified type **NJ08081**. • Do not use the projector with the air filter and filter cover removed. The use without the air filter could result in damage.
⚠ CAUTION
• If the air filter becomes clogged by dust or the like, internal temperature rises and could cause malfunction. The power is automatically turned off in order to prevent the projector from overheating internally.

● Caring for the Air filter

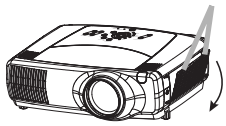
The air filter should be cleaned about every 100 hours. If the indicators or a message prompts you to clean the air filter, clean the air filter as soon as possible.

If the soiling will not come off the air filter, or it becomes damaged, then it needs to be replaced. Please replace the air filter as soon as possible.

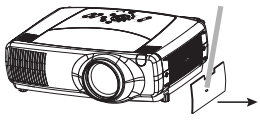
memo : When you replace the lamp, please replace also the air filter.

1. Turn off the projector, and unplug the power cord. Allow the lamp bulb to cool for at least 45 minutes.
2. After making sure that the projector has cooled adequately, remove the filter cover and air filter.
3. Apply a vacuum cleaner to the top of the filter cover and the air filter to clean.
   If the soiling will not come off the air filter, or it becomes damaged, it needs to be replaced.
4. Insert the cleaned air filter or a new air filter, and replace the filter cover.
5. Turn on the projector power, and reset the filter timer.
   (1) While the projector running, press the MENU button to open the menu.
   (2) Choose the “OPTION” on the menu using the ▲ / ▼ button, then press the ▶ button or ENTER button.
   (3) Choose the “FILTER TIME” using the ▲ / ▼ button, then press and hold the RESET button for 3 seconds.
   (4) Choose the “RESET” using the ▲ button.
   memo : Incorrectly resetting of the filter timer (resetting without replacement, or neglect of resetting after replacement) will result in incorrect message functions.

Hold the release buttons of the filter cover while pulling down it.



Hold the release tab of the air filter while pulling out it.



6-5 Lamp

⚠WARNING

HIGH VOLTAGE

HIGH TEMPERATURE

HIGH PRESSURE

The projector uses a high-pressure mercury glass lamp. The lamp can **break with a loud bang, or burn out**, if jolted or scratched, handled while hot, or worn over time.
Note that each lamp has a different lifetime, and some may burst or burn out soon after you start using them. In addition, when the bulb bursts, it is possible for **shards of glass** to fly into the lamp housing, and for **gas containing mercury** to escape from the projector's vent holes.

About disposal of a lamp • This product contains a mercury lamp; do not put in trash. Dispose of in accord with environmental laws.
For lamp recycling, go to www.lamprecycle.org. (in USA)
For product disposal, contact your local government agency or www.eiae.org (in the US) or www.epsc.ca (in Canada).

Disconnect the plug from the power outlet

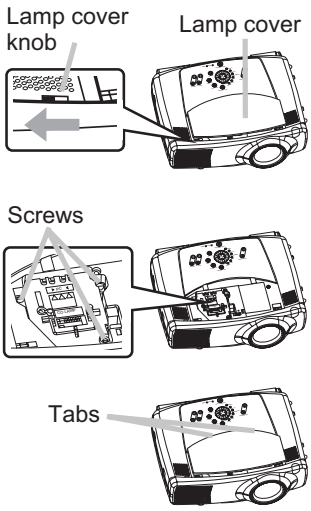
- If the lamp should break (it will make a loud bang when it does), unplug the power cord from the outlet, and make sure to request a replacement lamp from your local dealer. Note that shards of glass could damage the projector's internals, or cause injury during handling, so please do not try to clean the projector or replace the lamp yourself.
- If the lamp should break (it will make a loud bang when it does), ventilate the room well, and make sure not to breathe the gas that comes out of the projector vents, or get it in your eyes or mouth.
- Before replacing the lamp, make sure the power switch is off and the power cable is not plugged in, then wait at least 45 minutes for the lamp to cool sufficiently. Handling the lamp while hot can cause burns, as well as damaging the lamp.

- Do not open the lamp cover while the projector is suspended from above. This is dangerous, since if the lamp's bulb has broken, the shards will fall out when the cover is opened. In addition, working in high places is dangerous, so ask your local dealer to have the lamp replaced even if the bulb is not broken.
- Do not use the projector with the lamp cover removed. At the lamp replacing, make sure that the screws are screwed in firmly. Loose screws could result in damage or injury.

- Use only the lamp of the specified type.
  CP-X1200/CP-X1250: **DT00601**
  CP-X1200WA: **DT00591**
- If the lamp breaks soon after the first time it is used, it is possible that there are electrical problems elsewhere besides the lamp. If this happens, contact your local dealer or a service representative.
- Handle with care: jolting or scratching could cause the lamp bulb to burst during use.
- If the indicators or a message prompts you to replace the lamp (see the section "Related Messages" and "Regarding the indicator Lamps"), replace the lamp as soon as possible. Using the lamp for long periods of time, or past the replacement date, could cause it to burst. Do not use old (used) lamps; this is a cause of breakage.

● **Replacing the Lamp**

If the indicators or a message prompts you to replace the lamp, replace the lamp as soon as possible.



1. Turn off the projector, and unplug the power cord. Allow the lamp bulb to cool for at least 45 minutes, and prepare a new lamp.
2. After making sure that the projector has cooled adequately, slide the knob of a lamp cover lock as shown in the Figure. Then, one side of the lamp cover is raised. Pull up the lamp cover and remove it, as shown in the Figure.
3. Unscrew the 3 screws, and slowly pull out the lamp by the handle. Be careful not to touch the inside of the lamp case.
4. Insert the new lamp, and tighten the 3 screws firmly to lock it in place.
5. Interlocking the 2 tabs of the lamp cover to the projector, put the lamp cover on the projector. Then push the point of the lamp cover to fix it, as shown in the Figure. Make sure that the lamp cover does't come up.
6. Turn on the projector, and reset the lamp timer.
   (1) While the projector running, press the MENU button to open the menu.
   (2) Choose the "OPTION" on the menu using the ▲ / ▼ button, then press the ▶ button or ENTER button.
   (3) Choose the "LAMP TIME" using the ▲ / ▼ button, then press and hold the RESET button for 3 seconds.
   (4) Choose the "RESET" using the ▲ button.

   memo : When the lamp has been replaced after the message of "THE POWER WILL TURN OFF AFTER 0hr." is displayed, complete this operation within 10 minutes of switching power on.

   memo : Incorrectly resetting of the lamp timer (resetting without replacement, or neglect of resetting after replacement) will result in incorrect message functions.

6-6 Lens

⚠ WARNING

- Before replacing the projector lens, be sure to read this manual, the "User's Manual-Safety Guide" and the "Optional Lens User's Manual" of the LCD projector for use with this lens.
- Do not place the lens in a location subject to direct sunlight or other strong lighting or near heat-radiating equipment.
- Do not subject the lens to shocks.
- Be sure to unplug the LCD projector before replacing the lens.
- Do not touch the fan of the LCD projector during operation.
- Before replacing the lens, be sure to turn off and unplug the LCD projector, and allow at least 45 minutes for the projector to fully cool.
- When attaching, take care so that dust not enter inside.

⚠ CAUTION

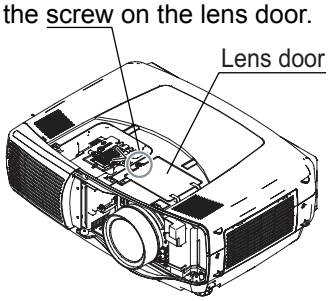
- When replacing the lens, do not touch the LCD panels or polarizing plates of the LCD projector or subject them to shocks.
- When replacing the lens, be careful not to damage the connectors or wires inside the LCD projector.
- After replacing the lens, part of the lens may stick out from the LCD projector.

⚠ ATTENTION

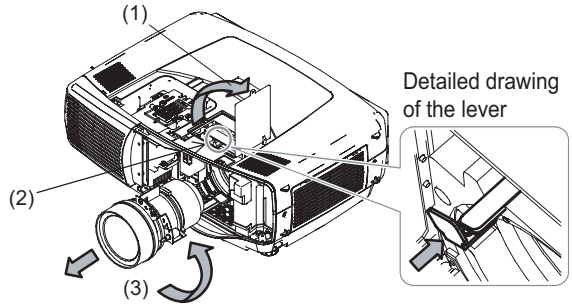
- Do not touch the lens directly with your hands or fingers.
  This can dirty the lens and cause deterioration in image quality.
- The lens is a precision optical device. Carefully handle the lens without subjecting it to shocks or vibrations.
- When resting the lens on a surface, place the lens face down on a soft cloth.

● **Replacing the Lens**

1. Slide the lamp cover lock to unlock the lamp cover and then grasp the projecting part of the lamp cover to lift it open.
2. Remove the two screws on the bottom of the projector and then pull off the front panel.
3. Loosen the screw on the lens door.



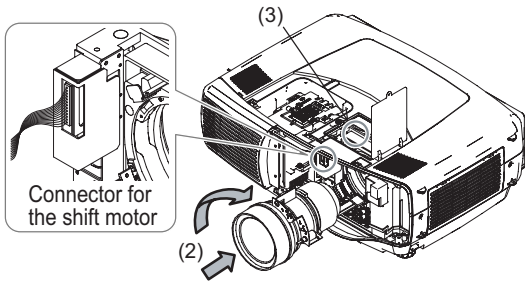
4. Remove the lens.
   (1) Open the lens door.
   (2) Press the lens release lever.
   (3) Rotate the lens counterclockwise and pull it out.



Important instructions when removing the lens:

1. Do not touch the prism area at the rear of the lens.
2. Do not touch the terminals.
3. Do not pull the wires.

5. Mount the replacement lens.
   (1) Align the red mark on the lens with the red mark on the lens holder and insert the lens into the holder.
   (2) Turn the lens clockwise until a click is heard, Attach the lens so that the red mark on the lens and the green mark on the holder are aligned.
   (3) Confirm that the lens is securely locked.
   (4) After replacing the lens, make sure that the connector for the shift motor is firmly set in place.



6. Close the lens door and tighten its screw.
7. Reattach the front panel.
8. Reattach the lamp cover to complete the lens replacement.
   (1) Align the two tabs on the lamp cover with the receiving areas on the projector.
   (2) Press the lamp cover into place.

6-7 Other care

⚠ WARNING

- Please carefully read the “User’s Manual - Safety Guide”.
- Before caring, make sure the power switch is off and the power cable is not plugged in.
- Be cautious of high temperature. Do not touch about the lens and ventilation openings during use or immediately after use prevent a burn.
- Never try to care for the inside of the unit yourself. Doing so is dangerous.

⚠ CAUTION

- Incorrect care could have adverse influence such as discoloration, peeling paint, etc.
- Do not use cleaner or chemicals other than those listed below, including benzene and paint thinner.
- Do not use aerosols or sprays.
- Do not polish or wipe with hard objects.

● **Caring for the inside of the projector**

In order to ensure the safe use of your projector, please have it cleaned and inspected by your local dealer about once every 2 years.

● **Caring for the lens**

1. Turn off the projector, and unplug the power cord.
2. Lightly wipe the lens with a commercially available lens-cleaning wipe. Do not touch the lens directly with your hand.

● **Caring for the cabinet and remote control**

1. Turn off the projector, and unplug the power cord.
2. Wipe lightly with gauze or a soft cloth.
   memo : If soiling is severe, dip soft cloth in water or a neutral cleaner dilute in water, and wipe lightly after wringing well. Then, wipe lightly with a soft, dry cloth.

6-8 Notice of AUTO adjustment

Use of AUTO adjustment with the image through RGB input optimizes V_POSI, H_POSI, H_SIZE and H_PHASE automatically.

In case that projected image has dark tone around its peripheral, AUTO operation sometimes makes artifacts in the image, shifts capture area and so on. Those failures are caused by period of image data is not exactly distinguished to period of blanking on signal processing.

To avoid such phenomena, AUTO function should be used with the full size picture that has bright tone on its peripheral.

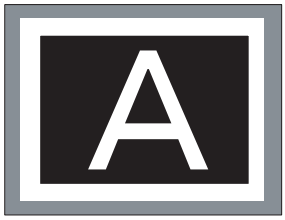


Image when AUTO operates correctly

Image when AUTO fails.

- Noting image of top or bottom lines.
- Shift of the image to East or West.
- Artifacts on image. Etc.

Note

1) The phenomenon at the failure of AUTO adjustment depends on resolution of input source, scene of picture etc.
2) There is no failure above in AUTO with video source through VIDEO, S-VIDEO or COMPONENT input. The reason is why recognition of input signal's standard does not need to search the capture range from input signal itself.

6-9 Related messages

When the unit's power is ON, messages such as those shown below may be displayed. When any such message is displayed on the screen, please respond as described below.

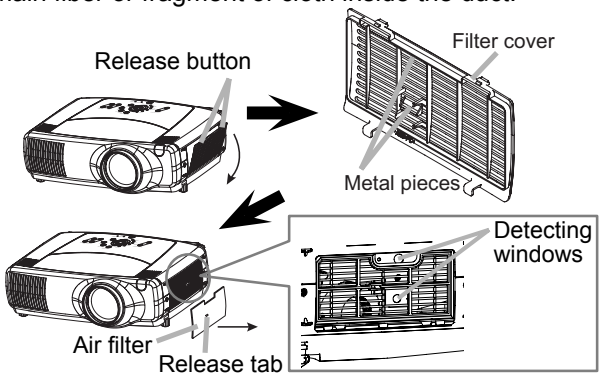
Message	Description
CHANGE THE LAMP AFTER REPLACING LAMP, RESET THE LAMP TIMER. (*1)	Lamp usage time is approaching 2000 hours. (*2) Preparation of a new lamp, and an early lamp change is recommended. After you have changed the lamp, please be sure to reset the lamp timer.
CHANGE THE LAMP AFTER REPLACING LAMP, RESET THE LAMP TIMER. THE POWER WILL TURN OFF AFTER ** hr. (*1)	Lamp usage time is approaching 2000 hours. (*2) A lamp change within ** hours is recommended. When lamp usage reaches 2000 hours, the power will automatically be turned OFF. Please change the lamp by referring to the "Lamp" section of this manual. After you have changed the lamp, please be sure to reset the lamp timer.
CHANGE THE LAMP AFTER REPLACING LAMP, RESET THE LAMP TIMER. THE POWER WILL TURN OFF AFTER 0 hr.	As lamp use has reached 2000 hours (*2), the power will soon be automatically turned OFF. Please immediately turn the power off, and change the lamp by referring to the "Lamp" section of this manual. After you have changed the lamp, please be sure to reset the lamp timer.
NO INPUT IS DETECTED ON ***	There is no input signal. Please confirm the signal input connection, and the status of the signal source.
SYNC IS OUT OF RANGE ON *** fH *****kHz fV *****Hz	The horizontal or vertical wavelength of the inputted signal is outside of the response parameters of this unit. Please confirm the specs for this unit or the signal source specs.
CHECK THE AIR FLOW	The internal portion temperature is rising. Please turn the power OFF, and allow the unit to cool down at least 20 minutes. After the projector has sufficiently cooled down, please make confirmation of the following items, and then turn the power ON again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 35°C?
CLEAN THE AIR FILTER POWER OFF FIRST, THEN CLEAN THE AIR FILTER. AFTER CLEANING THE AIR FILTER, RESET THE FILTER TIMER.	It is time to clean the air filter. Please immediately turn the power OFF, and clean or change the air filter by referring to the "Air Filter" section of this manual. After you have cleaned or changed the air filter, please be sure to reset the filter timer. If the same message is displayed after the treatment, please clean the metal pieces of filter cover and the dust-detecting windows, according to the following "Caring Of The Metal Pieces Of Filter Cover and The Dust-detecting Windows".

Note: (*1) • Although this message will be automatically disappeared after around 3 minutes, it will be reappeared every time the power is turned ON.
(*2) • Lamps have a finite product life. Lamps are characterized by the fact that, after long hours of usage, a lamp will no longer light up, or the lamp will break or burst, etc. This unit is equipped with an automatic shut-down function, such that the power will automatically be turned OFF when lamp usage time has reached 2,000 hours. Please be aware, however, that among lamp types, there are major differences in product lifetimes; a lamp may thus fail to light even prior to the functioning of the automatic shut-down function of this unit.

● Caring of the Metal Pieces of filter cover and the dust-detecting windows

The metal pieces of filter cover and the dust-detecting windows should be cleaned for normal operation of the optical dust detecting system. Please pay attention not to remain fiber or fragment of cloth inside the duct.

1. Turn off the projector, and unplug the power cord.
2. After making sure that the projector has cooled adequately, remove the filter cover.
   Hold the release buttons of the filter cover, while pulling down it.
3. Wipe the metal pieces of the filter cover by using a swab or a soft cloth.
4. Remove the air filter.
   Hold the release tab of the air filter, while pulling out it.
5. Wipe the dust-detecting windows by using a soft cloth.
6. Replace the air filter and filter cover.



6-10 Regarding the indicator lamps

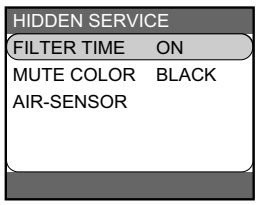
⚠ ATTENTION

- When the interior portion has become overheated, for safety purposes, the power source may be automatically turned off, and the indicator lamps may also be turned off. In such a case, press the "○" (OFF) side of the power switch, and wait at least 45 minutes. After the unit has sufficiently cooled down, please make confirmation of the attachment state of the lamp and lamp cover, and then turn the power on again.

Lighting and flashing of the POWER indicator, the LAMP indicator, and the TEMP indicator have the meanings as described in the Table below. Please respond in accordance with the instructions within the Table.

POWER indicator	LAMP indicator	TEMP indicator	Description
Lighting in orange	Turned off	Turned off	The projector is in a standby state.
Blinking in green	Turned off	Turned off	The projector is warming up. Please wait.
Lighting in green	Turned off	Turned off	The projector is in an ON state. Ordinary operations may be performed.
Blinking in orange	Turned off	Turned off	The projector is cooling down. Please wait.
Blinking in red	-	-	The projector is cooling down. A certain error has been detected. Please wait until the STANDBY/ON indicator finishes blink, and then perform the proper response measure using the item descriptions below as reference.
Lighting or blinking in red	Lighting in red	Turned off	The lamp does not light, and there is a possibility that interior portion has become heated. Please turn the power off, and allow the unit to cool down at least 20 minutes. After the projector has sufficiently cooled down, please make confirmation of the following items, and then turn the power on again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 35°C? If the same indication is displayed after the treatment, please change the lamp by referring to the section “Lamp”.
Lighting or blinking in red	Blinking in red	Turned off	Either there is no lamp and/or lamp cover, or either of these has not been properly fixed. Please turn the power off, and allow the unit to cool down at least 45 minutes. After the projector has sufficiently cooled down, please make confirmation of the attachment state of the lamp and lamp cover, and then turn the power on again.
Lighting or blanking in red	Turned off	Blinking in red	The cooling fan is not operating. Please turn the power off, and allow the unit to cool down at least 20 minutes. After the projector has sufficiently cooled down, please make confirmation that no foreign matter has become caught in the fan, etc., and then turn the power on again.
Lighting or blinking in red	Turned off	Lighting in red	There is a possibility that the interior portion has become heated. Please turn the power off, and allow the unit to cool down at least 20 minutes. After the projector has sufficiently cooled down, please make confirmation of the following items, and then turn the power on again. • Is there blockage of the air passage aperture? • Is the air filter dirty? • Does the peripheral temperature exceed 35°C?
Lighting in green	Alternative blinking in the red		There is a possibility that the interior portion has become overcooled. Please use the unit within the usage temperature parameters (0°C to 35°C). After the treatment, resent the power to ON.
Lighting in green	Simultaneous blinking in red		It is time to clean the air filter, or there is no Filter cover. Please immediately turn the power OFF, and clean or change the air filter by referring to the "Air Filter" section of this manual. After you have cleaned or changed the lamp, please be sure to reset the filter timer. After the treatment, resent the power to ON.

6-11 HIDDEN SERVICE menu



To display the OSD for “HIDDEN SERVICE” menu set up.

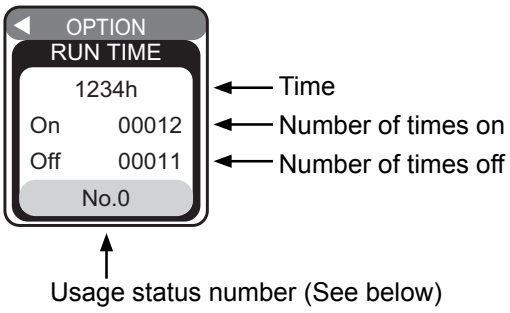
By the control panel	By the remote control transmitter
1. Display the menu by the “MENU” button. 2. Select the “OPTION” on the menu. 3. Continue press the button “◀” first, then press the button “◀” together with “RESET”, and hold for 3 seconds.	1. Display the menu by the “MENU” button. 2. Select the “OPTION” on the menu. 3. Press the “MAGNIFY OFF” button. Next hold the “MAGNIFY OFF” button for 3 seconds.

● Setup of Filter time (“ON” or “OFF”)

1. Select the “FILTER TIME” on the OSD using button “▼” .
   Next press the “▶” to select “FILTER TIME MENU” by the HIDDEN SERVICE MENU.
2. TURN ON : Select the “TURN ON” on the OSD using button “▶”.
   TURN OFF : Select the “TURN OFF” on the OSD using button “◀”.
3. The OSD will be ended by no operation for 10 seconds or change of input signal. To end immediately, use one of buttons except buttons “▲”, “▼”, “◀”, “▶”.

6-12 Set operating time display method (accumulated lamp time display method)

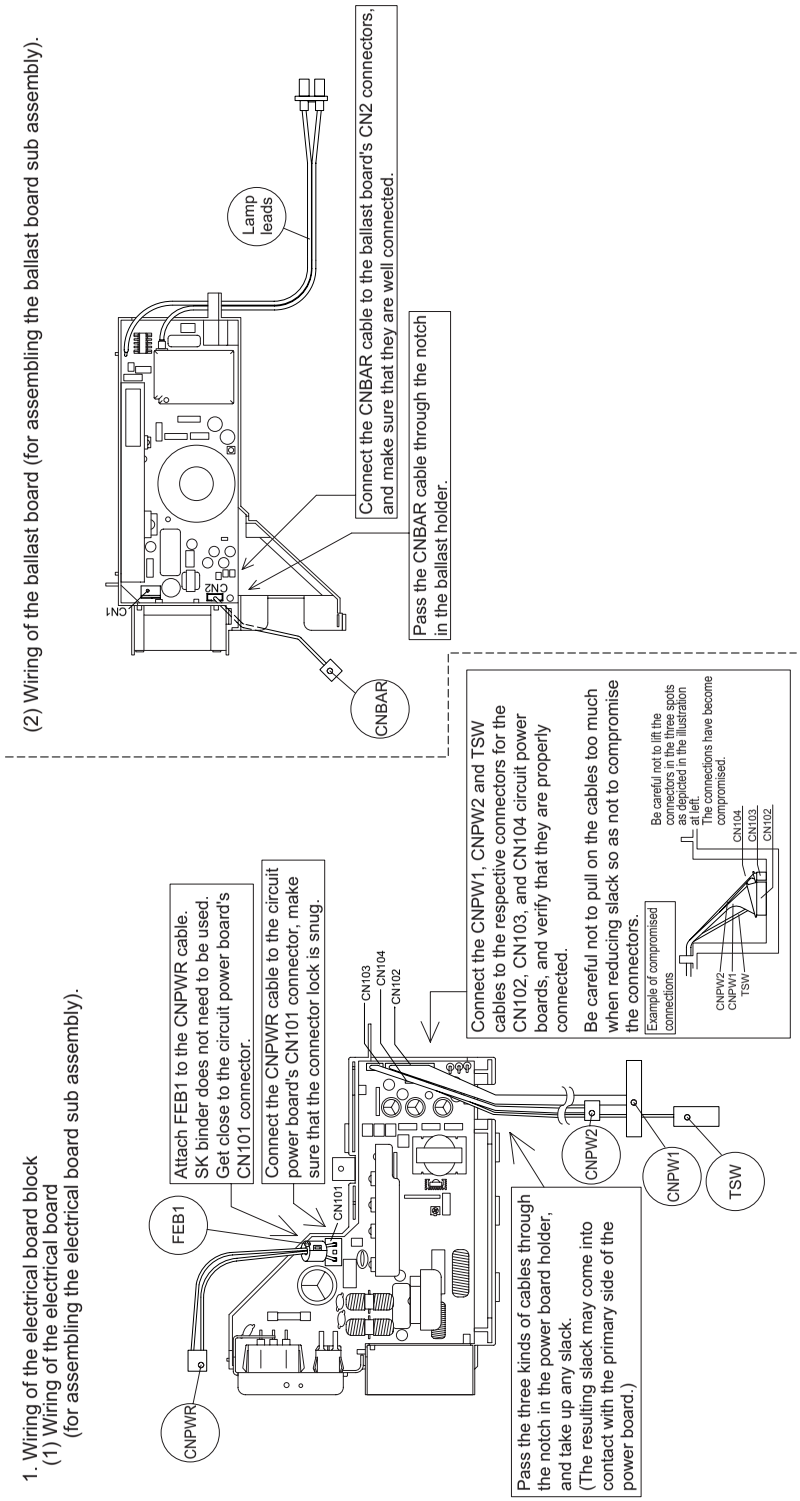
1. Select [OPTION] from the [MENU] display, then select [LAMP TIME].
2. Press the [RESET] button once, then press [KEYSTONE] for 3 seconds or more to display the screen shown below. (The menu will close after 10 seconds if there are no further operations.)
3. Use “▲” or “▼” to select the usage status number. (The usage status is as shown below.)



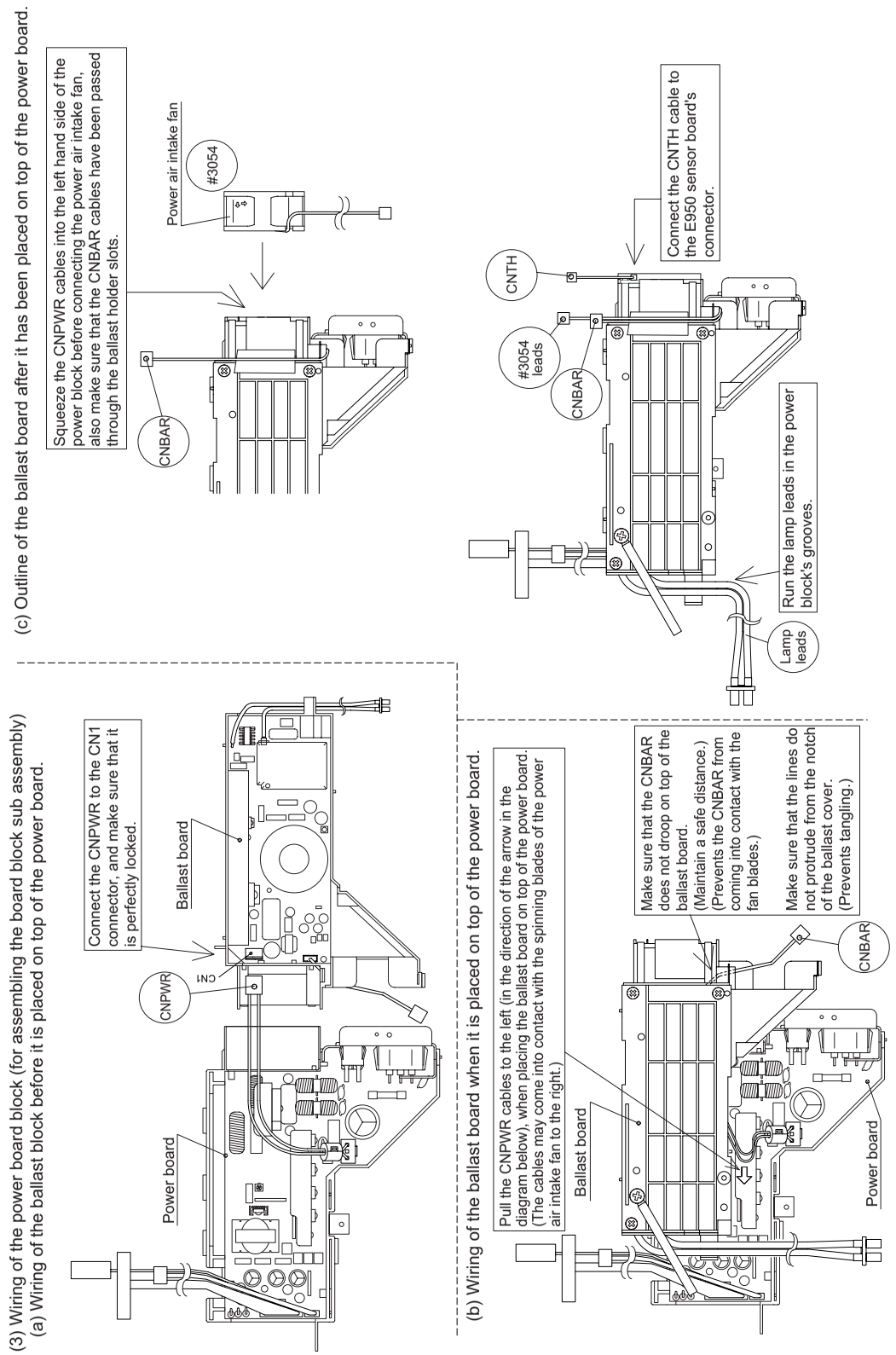
Usage status number

0 ..... Total usage status
1 ..... Current usage status
2 ..... Usage status before first reset
3 ..... Usage status before second reset
||
9 ..... Usage status before eighth reset

7. Wiring diagram

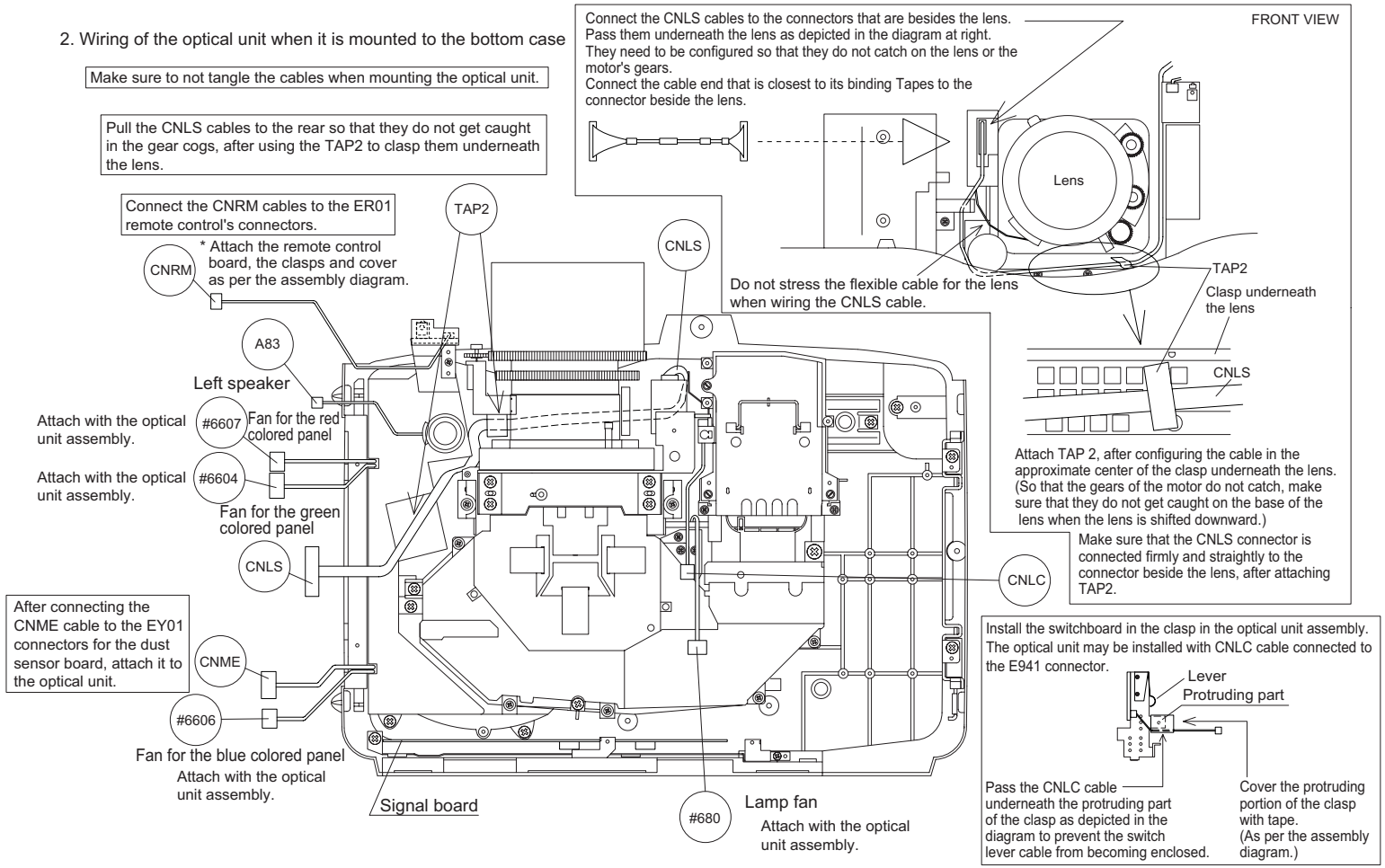

1. Wiring of the electrical board block
(1) Wiring of the electrical board
(for assembling the electrical board sub assembly).
(2) Wiring of the ballast board (for assembling the ballast board sub assembly).
Lamp leads
Connect the CNBAR cable to the ballast board's CN2 connectors, and make sure that they are well connected.
Pass the CNBAR cable through the notch in the ballast holder.
CNBAR
CN1
CN2
Connect the CNPW1, CNPW2 and TSW cables to the respective connectors for the CN102, CN103, and CN104 circuit power boards, and verify that they are properly connected.
Be careful not to pull on the cables too much when reducing slack so as not to compromise the connectors.
Example of compromised connections
Be careful not to lift the connectors in the three spots as depicted in the illustration at left.
The connections have become compromised.
CN104
CN103
CN102
CNPW2
CNPW1
TSW
Attach FEB1 to the CNPWR cable.
SK binder does not need to be used.
Get close to the circuit power board's CN101 connector.
Connect the CNPWR cable to the circuit power board's CN101 connector, make sure that the connector lock is snug.
FEB1
CN101
CN103
CN104
CN102
CNPWR
CNPW2
CNPW1
TSW
Pass the three kinds of cables through the notch in the power board holder, and take up any slack.
(The resulting slack may come into contact with the primary side of the power board.)

Wiring diagram 1 (P5XLA/P5XMLA/P5XMLB)


(3) Wiring of the power board block (for assembling the board block sub assembly)
(a) Wiring of the ballast block before it is placed on top of the power board.
Connect the CNPWR to the CN1 connector, and make sure that it is perfectly locked.
Ballast board
CNPWR
CN1
Power board
(b) Wiring of the ballast board when it is placed on top of the power board.
Pull the CNPWR cables to the left (in the direction of the arrow in the diagram below), when placing the ballast board on top of the power board. (The cables may come into contact with the spinning blades of the power air intake fan to the right.)
Ballast board
Make sure that the CNBAR does not droop on top of the ballast board. (Maintain a safe distance.) (Prevents the CNBAR from coming into contact with the fan blades.)
Make sure that the lines do not protrude from the notch of the ballast cover. (Prevents tangling.)
CNBAR
Power board
(c) Outline of the ballast board after it has been placed on top of the power board.
Squeeze the CNPWR cables into the left hand side of the power block before connecting the power air intake fan, also make sure that the CNBAR cables have been passed through the ballast holder slots.
Power air intake fan
#3054
CNBAR
Connect the CNTH cable to the E950 sensor board's connector.
CNTH
#3054 leads
CNBAR
Run the lamp leads in the power block's grooves.
Lamp leads

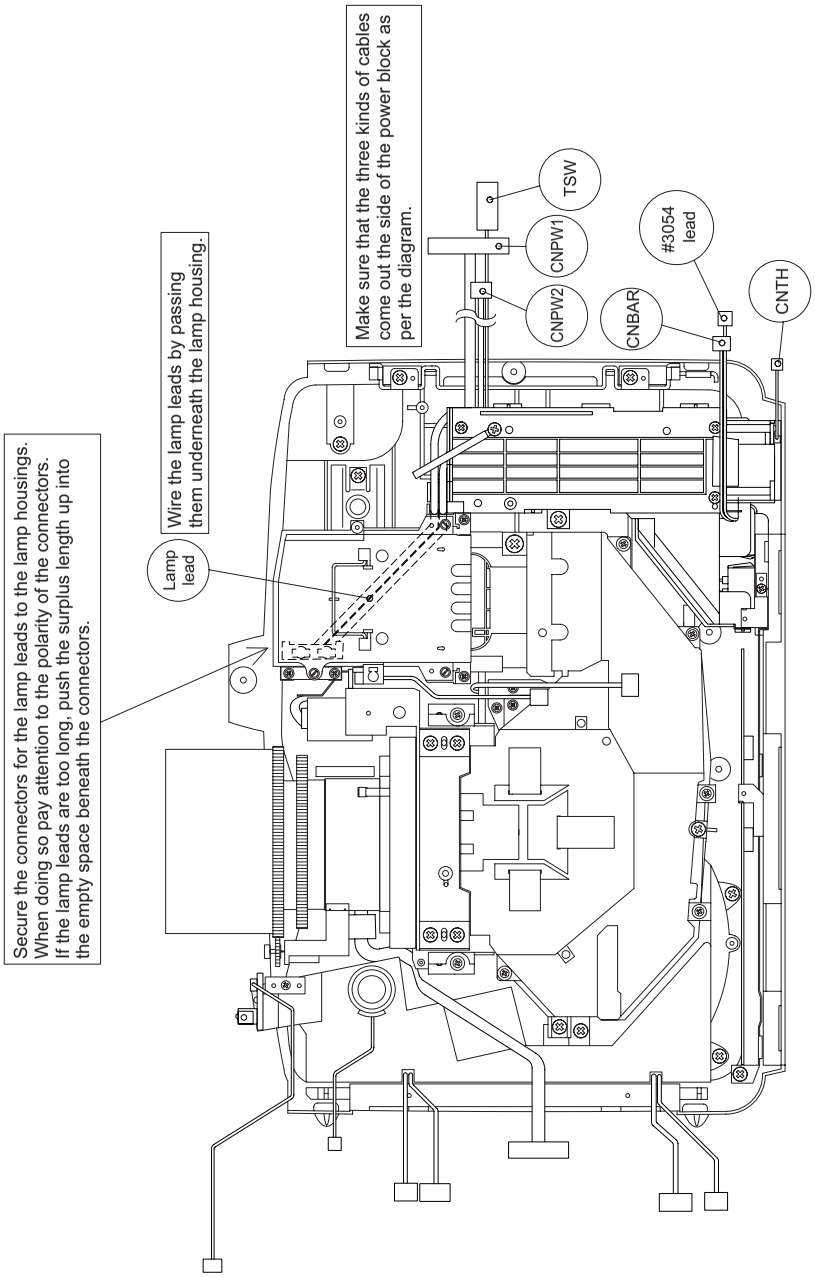
Wiring diagram 2 (P5XLA/P5XMLA/P5XMLB)

2. Wiring of the optical unit when it is mounted to the bottom case


Make sure to not tangle the cables when mounting the optical unit.
Pull the CNLS cables to the rear so that they do not get caught in the gear cogs, after using the TAP2 to clasp them underneath the lens.
Connect the CNRM cables to the ER01 remote control's connectors.
* Attach the remote control board, the clasps and cover as per the assembly diagram.
CNRM
TAP2
CNLS
A83
Left speaker
Attach with the optical unit assembly.
#6607
Fan for the red colored panel
Attach with the optical unit assembly.
#6604
Fan for the green colored panel
CNLS
After connecting the CNME cable to the EY01 connectors for the dust sensor board, attach it to the optical unit.
CNME
#6606
Fan for the blue colored panel
Attach with the optical unit assembly.
Signal board
#680
Lamp fan
Attach with the optical unit assembly.
CNLC
Connect the CNLS cables to the connectors that are besides the lens.
Pass them underneath the lens as depicted in the diagram at right.
They need to be configured so that they do not catch on the lens or the motor's gears.
Connect the cable end that is closest to its binding Tapes to the connector beside the lens.
FRONT VIEW
Lens
Do not stress the flexible cable for the lens when wiring the CNLS cable.
TAP2
Clasp underneath the lens
CNLS
Attach TAP 2, after configuring the cable in the approximate center of the clasp underneath the lens. (So that the gears of the motor do not catch, make sure that they do not get caught on the base of the lens when the lens is shifted downward.)
Make sure that the CNLS connector is connected firmly and straightly to the connector beside the lens, after attaching TAP2.
Install the switchboard in the clasp in the optical unit assembly.
The optical unit may be installed with CNLC cable connected to the E941 connector.
Lever
Protruding part
Pass the CNLC cable underneath the protruding part of the clasp as depicted in the diagram to prevent the switch lever cable from becoming enclosed.
Cover the protruding portion of the clasp with tape. (As per the assembly diagram.)

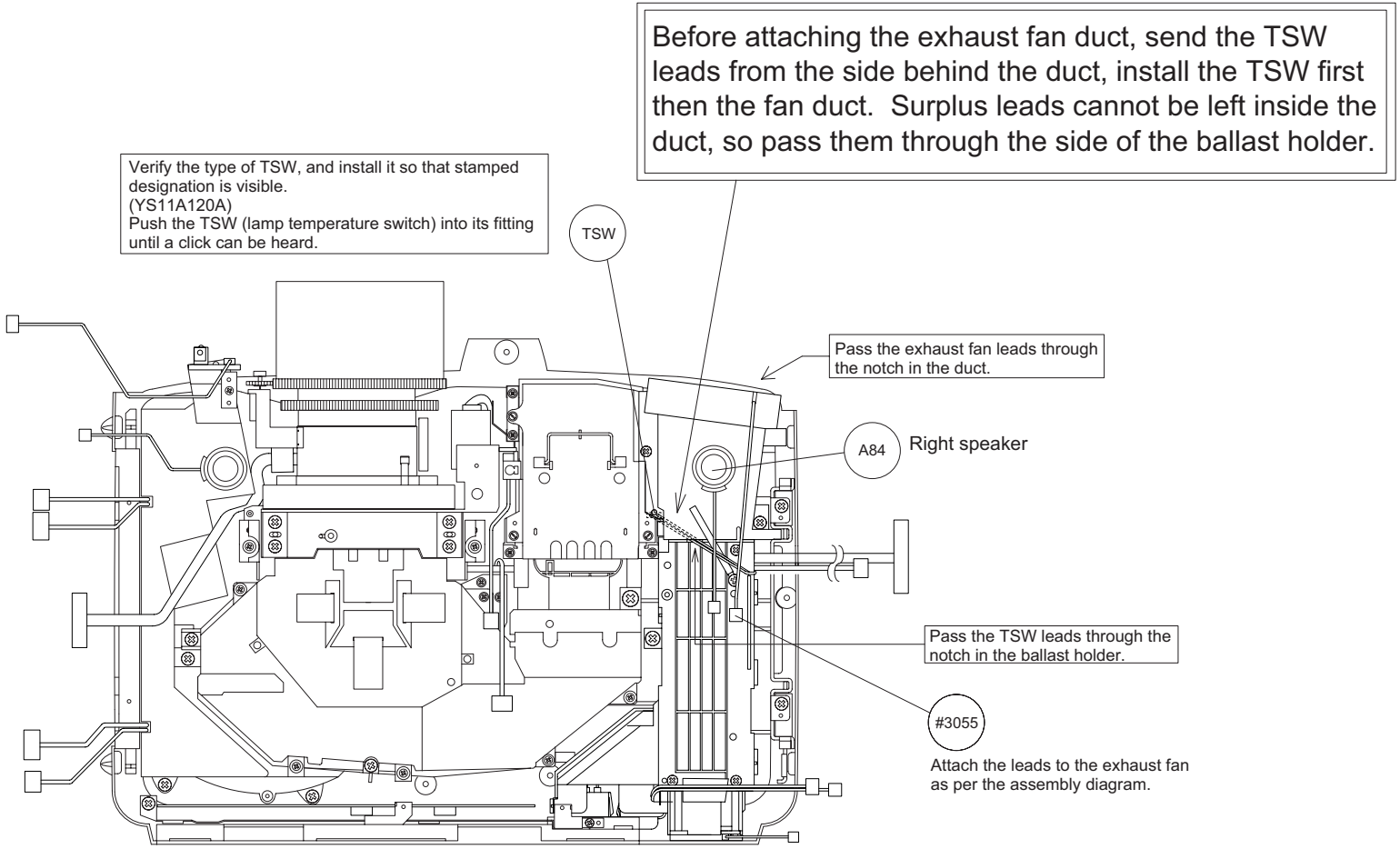
Wiring diagram 3 (P5XLA/P5XMLA/P5XMLB)

3. Wiring of bottom case when the power block is mounted to it.


Secure the connectors for the lamp leads to the lamp housings.
When doing so pay attention to the polarity of the connectors.
If the lamp leads are too long, push the surplus length up into
the empty space beneath the connectors.
Lamp lead
Wire the lamp leads by passing them underneath the lamp housing.
Make sure that the three kinds of cables come out the side of the power block as per the diagram.
TSW
CNPW1
CNPW2
CNBAR
#3054 lead
CNTH

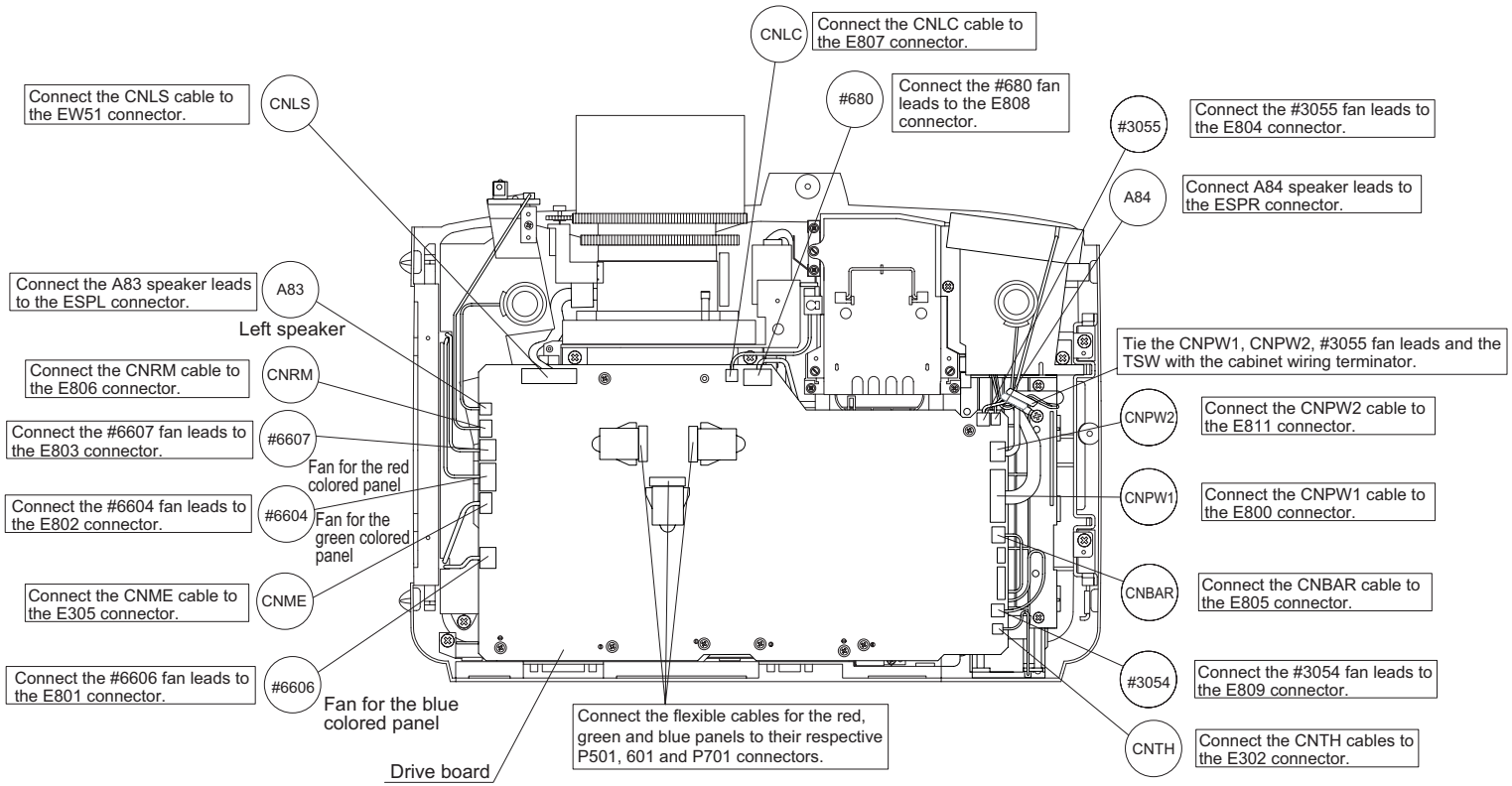
Wiring diagram 4 (P5XLA/P5XMLA/P5XMLB)

4. Wiring of the bottom case when the exhaust fan holder is mounted to it.


Before attaching the exhaust fan duct, send the TSW leads from the side behind the duct, install the TSW first then the fan duct. Surplus leads cannot be left inside the duct, so pass them through the side of the ballast holder.
Verify the type of TSW, and install it so that stamped designation is visible.
(YS11A120A)
Push the TSW (lamp temperature switch) into its fitting until a click can be heard.
TSW
Pass the exhaust fan leads through the notch in the duct.
A84
Right speaker
Pass the TSW leads through the notch in the ballast holder.
#3055
Attach the leads to the exhaust fan as per the assembly diagram.

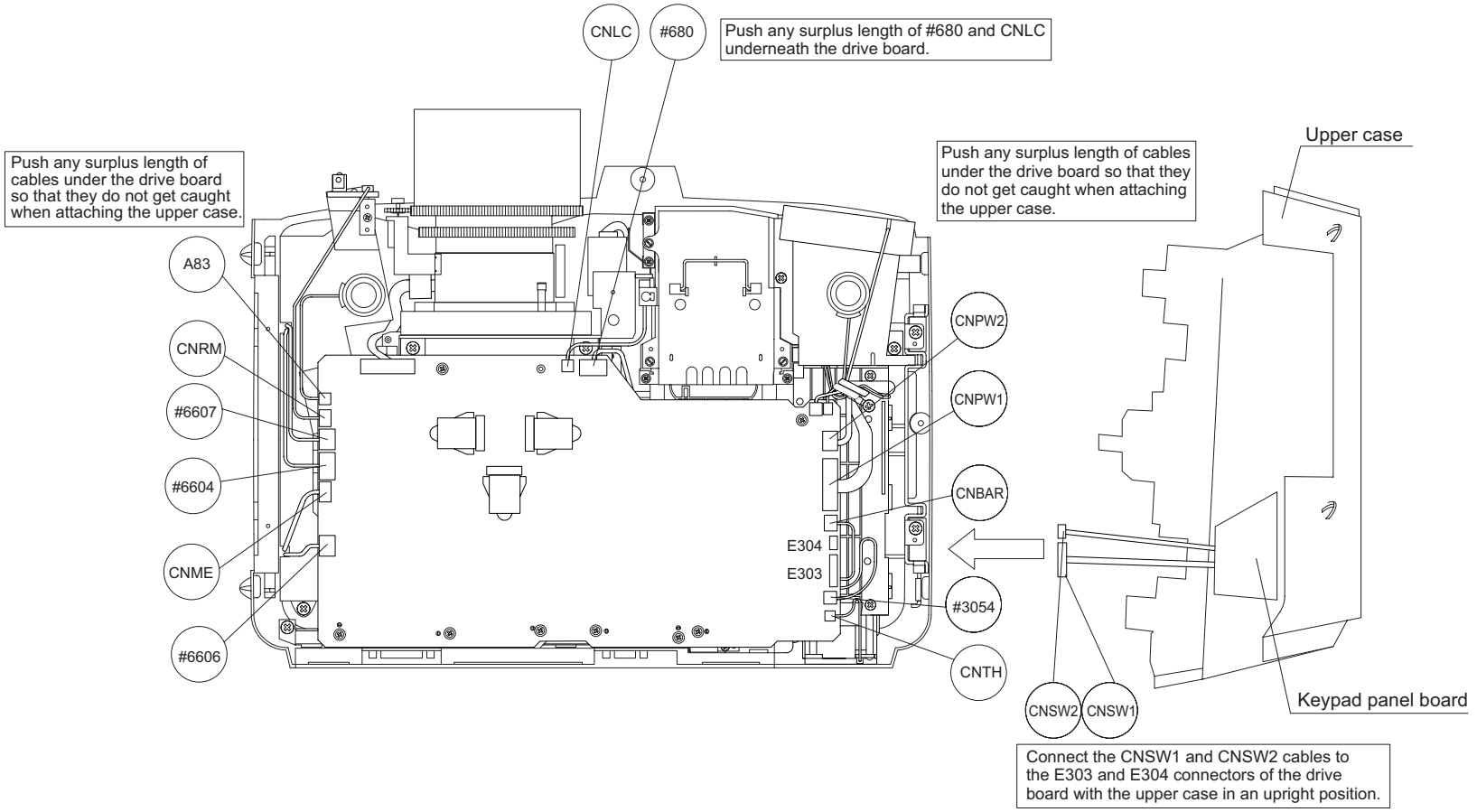
Wiring diagram 5 (P5XLA/P5XMLA/P5XMLB)

5. Wiring of the drive board when it is mounted


CNLC
Connect the CNLC cable to the E807 connector.
Connect the CNLS cable to the EW51 connector.
CNLS
#680
Connect the #680 fan leads to the E808 connector.
#3055
Connect the #3055 fan leads to the E804 connector.
A84
Connect A84 speaker leads to the ESPR connector.
Connect the A83 speaker leads to the ESPL connector.
A83
Left speaker
Tie the CNPW1, CNPW2, #3055 fan leads and the TSW with the cabinet wiring terminator.
Connect the CNRM cable to the E806 connector.
CNRM
CNPW2
Connect the CNPW2 cable to the E811 connector.
Connect the #6607 fan leads to the E803 connector.
#6607
Fan for the red colored panel
CNPW1
Connect the CNPW1 cable to the E800 connector.
Connect the #6604 fan leads to the E802 connector.
#6604
Fan for the green colored panel
CNBAR
Connect the CNBAR cable to the E805 connector.
Connect the CNME cable to the E305 connector.
CNME
#3054
Connect the #3054 fan leads to the E809 connector.
Connect the #6606 fan leads to the E801 connector.
#6606
Fan for the blue colored panel
CNTH
Connect the CNTH cables to the E302 connector.
Connect the flexible cables for the red, green and blue panels to their respective P501, 601 and P701 connectors.
Drive board

Wiring diagram 6 (P5XLA/P5XMLA/P5XMLB)

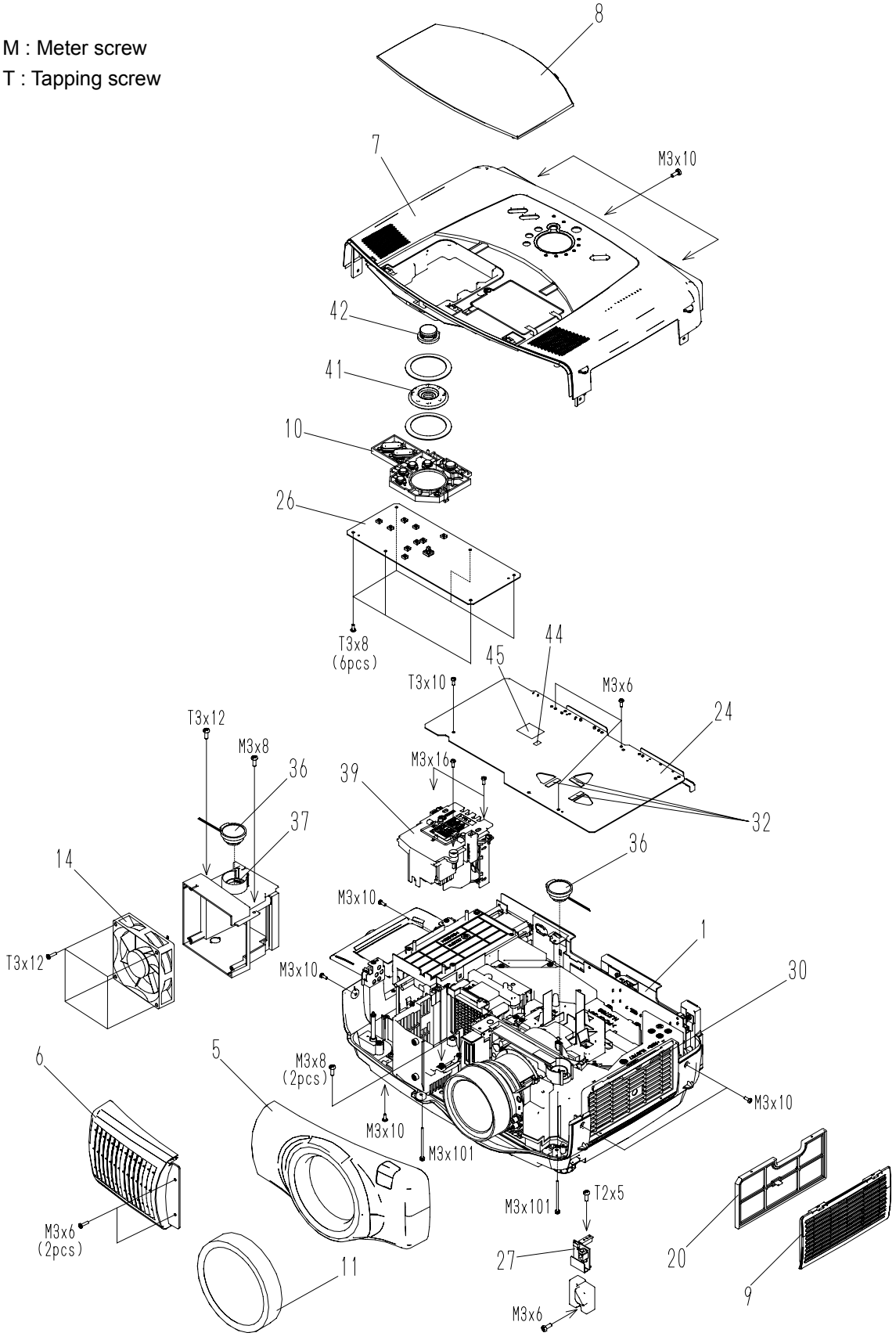
6. Wiring prior to the attachment of the upper case


CNLC
#680
Push any surplus length of #680 and CNLC underneath the drive board.
Push any surplus length of cables under the drive board so that they do not get caught when attaching the upper case.
Push any surplus length of cables under the drive board so that they do not get caught when attaching the upper case.
Upper case
A83
CNRM
#6607
#6604
CNME
#6606
CNPW2
CNPW1
CNBAR
E304
E303
#3054
CNTH
CNSW2
CNSW1
Keypad panel board
Connect the CNSW1 and CNSW2 cables to the E303 and E304 connectors of the drive board with the upper case in an upright position.

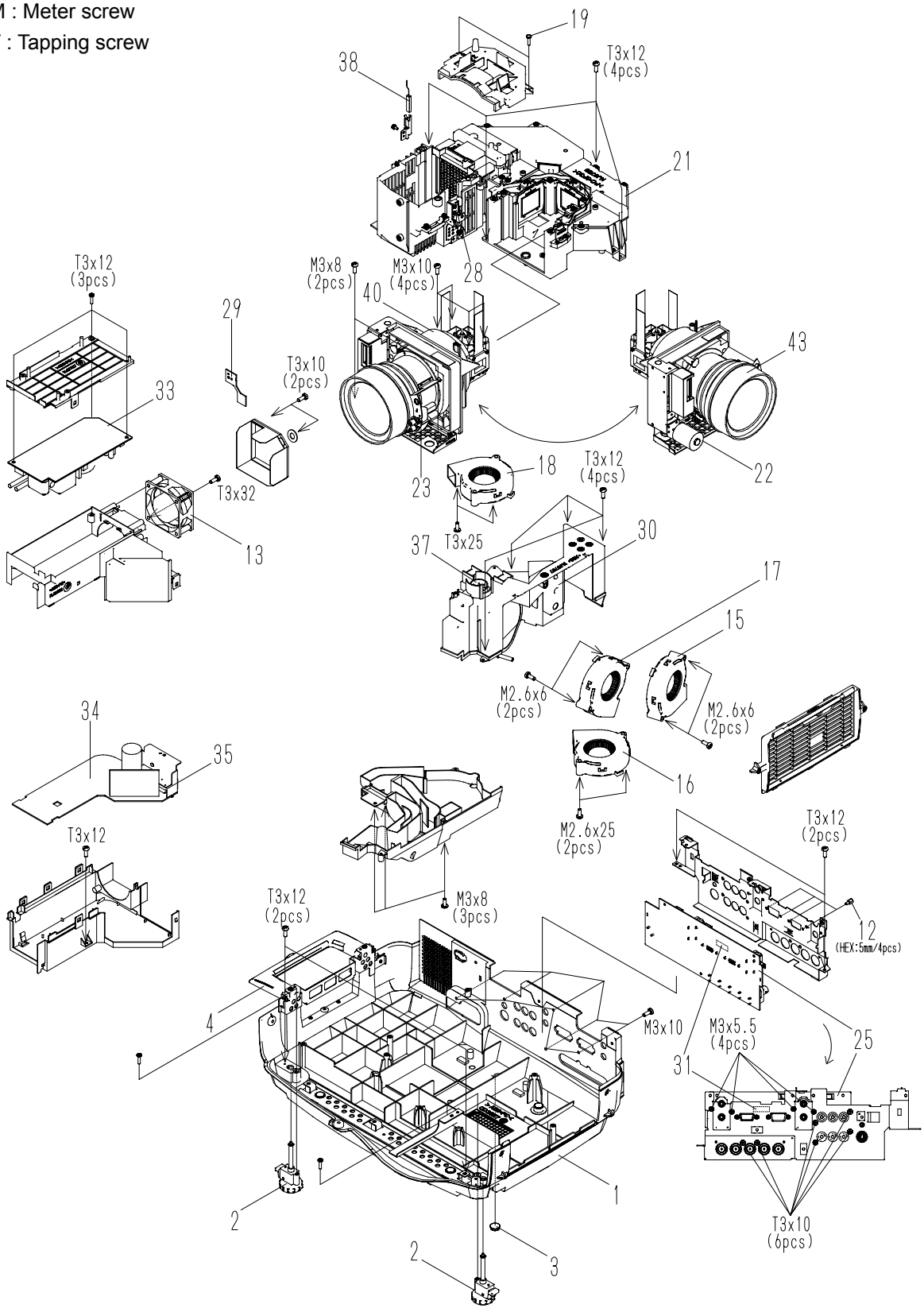
Wiring diagram 7 (P5XLA/P5XMLA/P5XMLB)

8. Disassembly diagram

M : Meter screw
T : Tapping screw

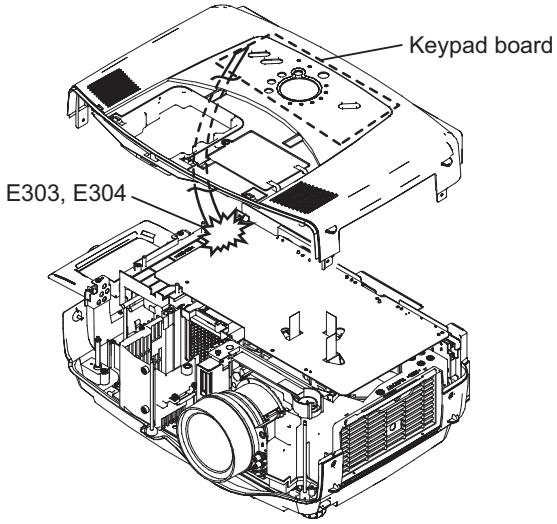


M : Meter screw
T : Tapping screw



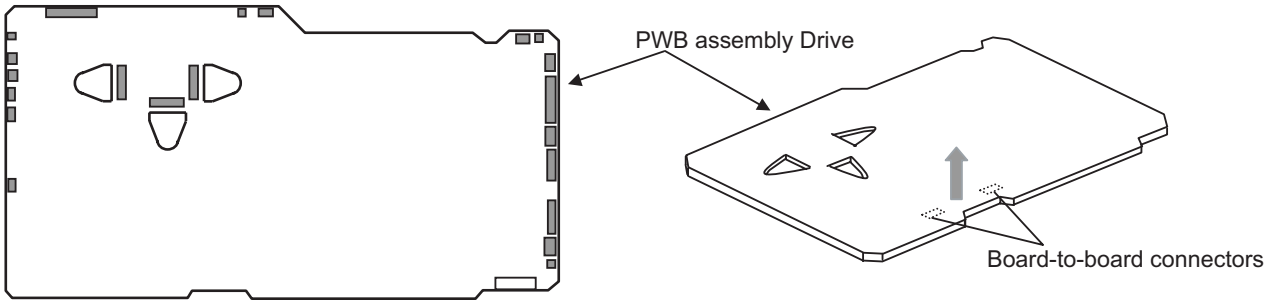
● Cautions when disassembling the projector

The Keypad board is installed on the Upper case. When removing, lift carefully without excessive force to prevent damaging cables and connectors.

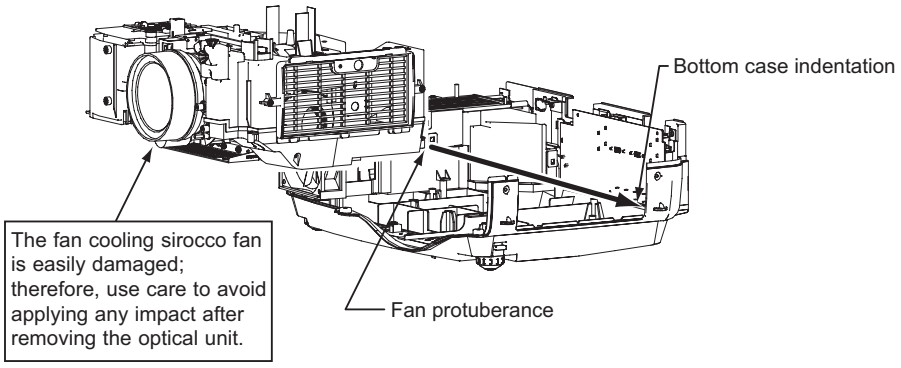


When removing the Drive board, there might be damage to the flexible cables of LCD panels and two board-to-board connectors. Handle them with care when disassembling.

(1) Before remove the Drive board, disconnect the all cables from connectors on it.
(2) Lift up the Drive board straightly to disconnect two board-to-board connectors on the opposite side of it, after taking off the screws of it.



When removing the optical unit, move it it the direction of the arrow so that the protuberance of the optical unit fan does not become caught in the indentation in the bottom case. Use care to avoid applying any stress to the optical unit.

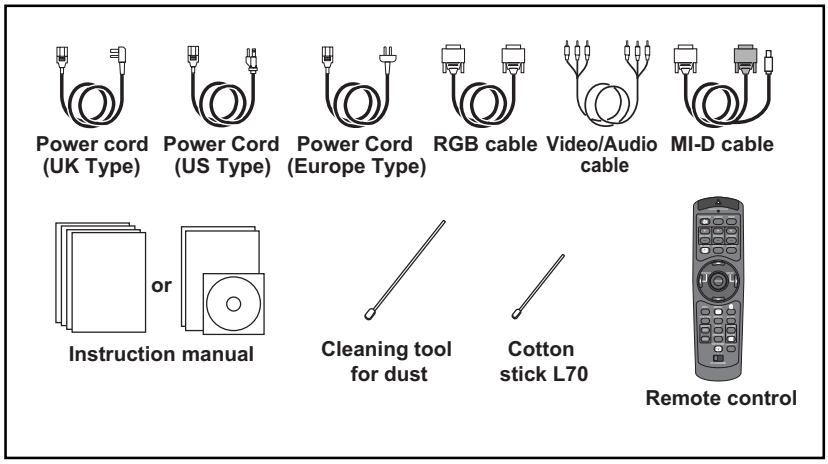

Bottom case indentation
The fan cooling sirocco fan is easily damaged; therefore, use care to avoid applying any impact after removing the optical unit.
Fan protuberance

9. Replacement parts list

THE UPDATED PARTS LIST

FOR THIS MODEL IS

AVAILABLE ON ESTA



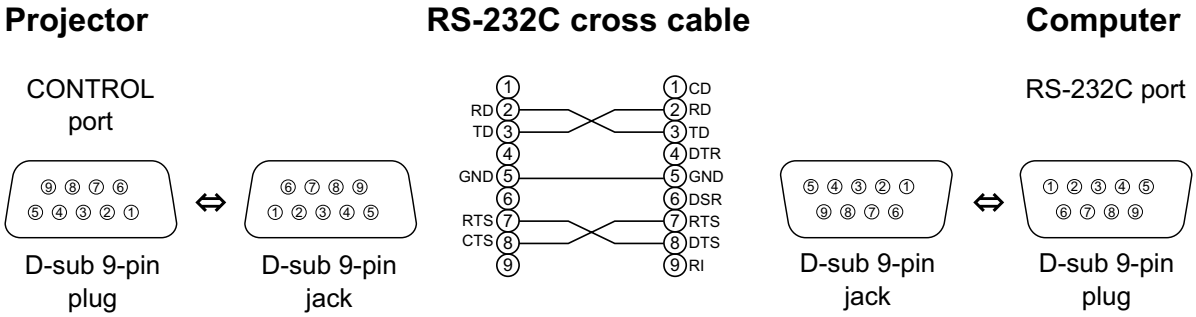
10. RS-232C communication

● Connecting the cable

(1) Turn off the projector and the computer power supplies.

(2) Connect the CONTROL port of the projector with a RS-232C port of the computer by a RS-232C cable. Use the cable that fulfills the specification shown in the following figure.

(3) Turn on the computer power supply and after the computer has started up, turn on the projector power supply.



● Communications setting

19200bps, 8N1

1. Protocol

Consist of header (7 bytes) + command data (6 bytes).

2. Header

BE + EF + 03 + 06 + 00 + CRC_low + CRC_high

CRC_low : Lower byte of CRC flag for command data

CRC_high : Upper byte of CRC flag for command data

3. Command data

Command data chart

byte_0	byte_1	byte_2	byte_3	byte_4	byte_5
Action		Type		Setting code	
low	high	low	high	low	high

Action (byte_0 - 1)

Action	Classification	Content
1	SET	Change setting to desired value.
2	GET	Read projector internal setup value.
4	INCREMENT	Increment setup value by 1.
5	DECREMENT	Decrement setup value by 1.
6	EXECUTE	Run a command.

Requesting projector status (Get command)

(1) Send the request code Header + Command data ('02H'+'00H'+ type (2 bytes)+'00H'+'00H') from the computer to the projector.
(2) The projector returns the response code '1DH'+ data (2 bytes) to the computer.

Changing the projector settings (Set command)

(1) Send the setting code Header + Command data ('01H'+'00H'+ type (2 bytes) + setting code (2 bytes)) from the computer to the projector.
(2) The projector changes the setting based on the above setting code.
(3) The projector returns the response code '06H' to the computer.

Using the projector default settings (Reset Command)

(1) The computer sends the default setting code Header + Command data ('06H'+'00H'+ type (2 bytes) +'00H'+ '00H') to the projector.
(2) The projector changes the specified setting to the default value.
(3) The projector returns the response code '06H' to the computer.

Increasing the projector setting value (Increment command)

(1) The computer sends the increment code Header + Command data ('04H'+'00H'+ type (2 bytes) +'00H'+ '00H') to the projector.
(2) The projector in creases the setting value on the above setting code.
(3) The projector returns the response code '06H' to the computer.

Decreasing the projector setting value (Decrement command)

(1) The computer sends the decrement code Header + Command data ('05H'+'00H'+ type (2 bytes) +'00H' + '00H') to the projector.
(2) The projector decreases the setting value on the above setting code.
(3) The projector returns the response code '06H' to the computer.

When the projector cannot understand the received command.

When the projector cannot understand the received command, the error code '15H' is sent back to the computer. Sometimes the projector cannot properly receive the command. In such a case, the command is not executed and the error code '15H' is sent back to the computer. If this error code is returned, send the same command again.

When the projector cannot execute the received command.

When the projector cannot execute the received command, the error code '1cH' + 'xxxxH' is sent back to the computer. When the data length is greater than indicated by the data length code, the projector ignore the excess data code.
Conversely when the data length is shorter than indicated by the data length code, an error code will be returned to the computer.

NOTE • Operation cannot be guaranteed when the projector receives an undefined command or data.
• Provide an interval of at least 40ms between the response code and any other code.
• The projector outputs test data when the power supply is switched ON, and when the lamp is lit. Ignore this data.
• Commands are not accepted during warm-up.

● Command data chart

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Keystone V	Get		BE EF	03	06 00	B9 D3	02 00	07 20	00 00
	Increment		BE EF	03	06 00	DF D3	04 00	07 20	00 00
	Decrement		BE EF	03	06 00	0E D2	05 00	07 20	00 00
Keystone V Reset	Execute		BE EF	03	06 00	08 D0	06 00	0C 70	00 00
Keystone H	Get		BE EF	03	06 00	E9 D0	02 00	0B 20	00 00
	Increment		BE EF	03	06 00	8F D0	04 00	0B 20	00 00
	Decrement		BE EF	03	06 00	5E D1	05 00	0B 20	00 00
Keystone H Reset	Execute		BE EF	03	06 00	98 D8	06 00	20 70	00 00
Brightness	Get		BE EF	03	06 00	89 D2	02 00	03 20	00 00
	Increment		BE EF	03	06 00	EF D2	04 00	03 20	00 00
	Decrement		BE EF	03	06 00	3E D3	05 00	03 20	00 00
Brightness Reset	Execute		BE EF	03	06 00	58 D3	06 00	00 70	00 00
Contrast	Get		BE EF	03	06 00	FD D3	02 00	04 20	00 00
	Increment		BE EF	03	06 00	9B D3	04 00	04 20	00 00
	Decrement		BE EF	03	06 00	4A D2	05 00	04 20	00 00
Contrast Reset	Execute		BE EF	03	06 00	A4 D2	06 00	01 70	00 00
Aspect	Set	4:3	BE EF	03	06 00	9E D0	01 00	08 20	00 00
		16:9	BE EF	03	06 00	0E D1	01 00	08 20	01 00
		SMALL	BE EF	03	06 00	FE D1	01 00	08 20	02 00
		NORMAL	BE EF	03	06 00	5E DD	01 00	08 20	10 00
	Get		BE EF	03	06 00	AD D0	02 00	08 20	00 00
Whisper	Set	NORMAL	BE EF	03	06 00	3B 23	01 00	00 33	00 00
		WHISPER	BE EF	03	06 00	AB 22	01 00	00 33	01 00
	Get		BE EF	03	06 00	08 23	02 00	00 33	00 00
Mirror	Set	Normal	BE EF	03	06 00	C7 D2	01 00	01 30	00 00
		H Inverse	BE EF	03	06 00	57 D3	01 00	01 30	01 00
		V Inverse	BE EF	03	06 00	A7 D3	01 00	01 30	02 00
		H&V Inverse	BE EF	03	06 00	37 D2	01 00	01 30	03 00
	Get		BE EF	03	06 00	F4 D2	02 00	01 30	00 00

(This table is continued to the following page.)

CP-X1200(P5XLA) / CP-X1250(P5XMLA) / CP-X1200WA(P5XMLB)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Language	Set	ENGLISH	BE EF	03	06 00	F7 D3	01 00	05 30	00 00
		FRANÇAIS	BE EF	03	06 00	67 D2	01 00	05 30	01 00
		DEUTSCH	BE EF	03	06 00	97 D2	01 00	05 30	02 00
		ESPAÑOL	BE EF	03	06 00	07 D3	01 00	05 30	03 00
		ITALIANO	BE EF	03	06 00	37 D1	01 00	05 30	04 00
		NORSK	BE EF	03	06 00	A7 D0	01 00	05 30	05 00
		NEDERLANDS	BE EF	03	06 00	57 D0	01 00	05 30	06 00
		PORTUGUÊS	BE EF	03	06 00	C7 D1	01 00	05 30	07 00
		日本語	BE EF	03	06 00	37 D4	01 00	05 30	08 00
		中文	BE EF	03	06 00	A7 D5	01 00	05 30	09 00
		한글	BE EF	03	06 00	57 D5	01 00	05 30	0A 00
		SVENSKA	BE EF	03	06 00	C7 D4	01 00	05 30	0B 00
		РУССКИЙ	BE EF	03	06 00	F7 D6	01 00	05 30	0C 00
		SUOMI	BE EF	03	06 00	67 D7	01 00	05 30	0D 00
		POLSKI	BE EF	03	06 00	97 D7	01 00	05 30	0E 00
	Get		BE EF	03	06 00	C4 D3	02 00	05 30	00 00
Gamma	Set	NORMAL	BE EF	03	06 00	C7 F0	01 00	A1 30	00 00
		CINEMA	BE EF	03	06 00	57 F1	01 00	A1 30	01 00
		DYNAMIC	BE EF	03	06 00	A7 F1	01 00	A1 30	02 00
		CUSTOM	BE EF	03	06 00	07 FD	01 00	A1 30	10 00
	Get		BE EF	03	06 00	F4 F0	02 00	A1 30	00 00
Custom Gamma	Get		BE EF	03	06 00	08 F1	02 00	A0 30	00 00
	Increment		BE EF	03	06 00	6E F1	04 00	A0 30	00 00
	Decrement		BE EF	03	06 00	BF F0	05 00	A0 30	00 00
Custom Color Temp	Set	USER	BE EF	03	06 00	3B F8	01 00	B0 30	10 00
		HIGH	BE EF	03	06 00	0B F5	01 00	B0 30	03 00
		MIDDLE	BE EF	03	06 00	9B F4	01 00	B0 30	02 00
		LOW	BE EF	03	06 00	6B F4	01 00	B0 30	01 00
	Get		BE EF	03	06 00	C8 F5	02 00	B0 30	00 00
Custom User R	Set	50	BE EF	03	06 00	57 F7	01 00	B1 30	05 00
		60	BE EF	03	06 00	C7 F6	01 00	B1 30	04 00
		70	BE EF	03	06 00	F7 F4	01 00	B1 30	03 00
		80	BE EF	03	06 00	67 F5	01 00	B1 30	02 00
		90	BE EF	03	06 00	97 F5	01 00	B1 30	01 00
		100	BE EF	03	06 00	07 F4	01 00	B1 30	00 00
	Get		BE EF	03	06 00	34 F4	02 00	B1 30	00 00
Custom User G	Set	50	BE EF	03	06 00	13 F7	01 00	B2 30	05 00
		60	BE EF	03	06 00	83 F6	01 00	B2 30	04 00
		70	BE EF	03	06 00	B3 F4	01 00	B2 30	03 00
		80	BE EF	03	06 00	23 F5	01 00	B2 30	02 00
		90	BE EF	03	06 00	D3 F5	01 00	B2 30	01 00
		100	BE EF	03	06 00	43 F4	01 00	B2 30	00 00
	Get		BE EF	03	06 00	70 F4	02 00	B2 30	00 00

(This table is continued to the following page.)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Custom User B	Set	50	BE EF	03	06 00	EF F6	01 00	B3 30	05 00
		60	BE EF	03	06 00	7F F7	01 00	B3 30	04 00
		70	BE EF	03	06 00	4F F5	01 00	B3 30	03 00
		80	BE EF	03	06 00	DF F4	01 00	B3 30	02 00
		90	BE EF	03	06 00	2F F4	01 00	B3 30	01 00
		100	BE EF	03	06 00	BF F5	01 00	B3 30	00 00
	Get		BE EF	03	06 00	8C F5	02 00	B3 30	00 00
Color Balance R	Get		BE EF	03	06 00	01 D2	02 00	05 20	00 00
	Increment		BE EF	03	06 00	67 D2	04 00	05 20	00 00
	Decrement		BE EF	03	06 00	B6 D3	05 00	05 20	00 00
Color Balance R Reset	Execute		BE EF	03	06 00	94 D3	06 00	05 70	00 00
Color Balance G	Get		BE EF	03	06 00	B5 D7	02 00	12 20	00 00
	Increment		BE EF	03	06 00	D3 D7	04 00	12 20	00 00
	Decrement		BE EF	03	06 00	02 D6	05 00	12 20	00 00
Color Balance G Reset	Execute		BE EF	03	06 00	04 DB	06 00	29 70	00 00
Color Balance B	Get		BE EF	03	06 00	45 D2	02 00	06 20	00 00
	Increment		BE EF	03	06 00	23 D2	04 00	06 20	00 00
	Decrement		BE EF	03	06 00	F2 D3	05 00	06 20	00 00
Color Balance B Reset	Execute		BE EF	03	06 00	D0 D3	06 00	06 70	00 00
Sharpness	Get		BE EF	03	06 00	F1 72	02 00	01 22	00 00
	Increment		BE EF	03	06 00	97 72	04 00	01 22	00 00
	Decrement		BE EF	03	06 00	46 73	05 00	01 22	00 00
Sharpness Reset	Execute		BE EF	03	06 00	C4 D0	06 00	09 70	00 00
Color	Get		BE EF	03	06 00	B5 72	02 00	02 22	00 00
	Increment		BE EF	03	06 00	D3 72	04 00	02 22	00 00
	Decrement		BE EF	03	06 00	02 73	05 00	02 22	00 00
Color Reset	Execute		BE EF	03	06 00	80 D0	06 00	0A 70	00 00
Tint	Get		BE EF	03	06 00	49 73	02 00	03 22	00 00
	Increment		BE EF	03	06 00	2F 73	04 00	03 22	00 00
	Decrement		BE EF	03	06 00	FE 72	05 00	03 22	00 00
Tint Reset	Execute		BE EF	03	06 00	7C D1	06 00	0B 70	00 00
My Memory Load	Set	1	BE EF	03	06 00	0E D7	01 00	14 20	00 00
		2	BE EF	03	06 00	9E D6	01 00	14 20	01 00
		3	BE EF	03	06 00	6E D6	01 00	14 20	02 00
		4	BE EF	03	06 00	FE D7	01 00	14 20	03 00
My Memory Save	Set	1	BE EF	03	06 00	F2 D6	01 00	15 20	00 00
		2	BE EF	03	06 00	62 D7	01 00	15 20	01 00
		3	BE EF	03	06 00	92 D7	01 00	15 20	02 00
		4	BE EF	03	06 00	02 D6	01 00	15 20	03 00

(This table is continued to the following page.)

CP-X1200(P5XLA) / CP-X1250(P5XMLA) / CP-X1200WA(P5XMLB)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
V Position	Get		BE EF	03	06 00	0D 83	02 00	00 21	00 00
	Increment		BE EF	03	06 00	6B 83	04 00	00 21	00 00
	Decrement		BE EF	03	06 00	BA 82	05 00	00 21	00 00
V Position Reset	Execute		BE EF	03	06 00	E0 D2	06 00	02 70	00 00
H Position	Get		BE EF	03	06 00	F1 82	02 00	01 21	00 00
	Increment		BE EF	03	06 00	97 82	04 00	01 21	00 00
	Decrement		BE EF	03	06 00	46 83	05 00	01 21	00 00
H Position Reset	Execute		BE EF	03	06 00	1C D3	06 00	03 70	00 00
H Phase	Get		BE EF	03	06 00	49 83	02 00	03 21	00 00
	Increment		BE EF	03	06 00	2F 83	04 00	03 21	00 00
	Decrement		BE EF	03	06 00	FE 82	05 00	03 21	00 00
H Size	Get		BE EF	03	06 00	B5 82	02 00	02 21	00 00
	Increment		BE EF	03	06 00	D3 82	04 00	02 21	00 00
	Decrement		BE EF	03	06 00	02 83	05 00	02 21	00 00
H Size Reset	Execute		BE EF	03	06 00	68 D2	06 00	04 70	00 00
Over Scan	Get		BE EF	03	06 00	91 70	02 00	09 22	00 00
	Increment		BE EF	03	06 00	F7 70	04 00	09 22	00 00
	Decrement		BE EF	03	06 00	26 71	05 00	09 22	00 00
Over Scan Reset	Execute		BE EF	03	06 00	EC D9	06 00	27 70	00 00
Color Space	Set	AUTO	BE EF	03	06 00	0E 72	01 00	04 22	00 00
		RGB	BE EF	03	06 00	9E 73	01 00	04 22	01 00
		SMPTE240	BE EF	03	06 00	6E 73	01 00	04 22	02 00
		REC709	BE EF	03	06 00	FE 72	01 00	04 22	03 00
		REC601	BE EF	03	06 00	CE 70	01 00	04 22	04 00
	Get		BE EF	03	06 00	3D 72	02 00	04 22	00 00
Component	Set	COMPONENT	BE EF	03	06 00	4A D7	01 00	17 20	00 00
		SCART RGB	BE EF	03	06 00	DA D6	01 00	17 20	01 00
	Get		BE EF	03	06 00	79 D7	02 00	17 20	00 00
Video Format	Set	AUTO	BE EF	03	06 00	9E 75	01 00	00 22	0A 00
		NTSC	BE EF	03	06 00	FE 71	01 00	00 22	04 00
		PAL	BE EF	03	06 00	6E 70	01 00	00 22	05 00
		SECAM	BE EF	03	06 00	6E 75	01 00	00 22	09 00
		NTSC 4.43	BE EF	03	06 00	5E 72	01 00	00 22	02 00
		M-PAL	BE EF	03	06 00	FE 74	01 00	00 22	08 00
		N-PAL	BE EF	03	06 00	0E 71	01 00	00 22	07 00
	Get		BE EF	03	06 00	0D 73	02 00	00 22	00 00
3D-YCS	Set	TURN OFF	BE EF	03	06 00	E6 70	01 00	0A 22	00 00
		TURN ON	BE EF	03	06 00	76 71	01 00	0A 22	01 00
	Get		BE EF	03	06 00	D5 70	02 00	0A 22	00 00

(This table is continued to the following page.)

CP-X1200(P5XLA) / CP-X1250(P5XMLA) / CP-X1200WA(P5XMLB)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Video NR	Set	LOW	BE EF	03	06 00	26 72	01 00	06 22	01 00
		MIDDLE	BE EF	03	06 00	D6 72	01 00	06 22	02 00
		HIGH	BE EF	03	06 00	46 73	01 00	06 22	03 00
	Get		BE EF	03	06 00	85 73	02 00	06 22	00 00
S2-Aspect	Set	TURN OFF	BE EF	03	06 00	1A 71	01 00	0B 22	00 00
		TURN ON	BE EF	03	06 00	8A 70	01 00	0B 22	01 00
	Get		BE EF	03	06 00	29 71	02 00	0B 22	00 00
Auto Adjust	Execute		BE EF	03	06 00	91 D0	06 00	0A 20	00 00
Auto off	Get		BE EF	03	06 00	08 86	02 00	10 31	00 00
	Increment		BE EF	03	06 00	6E 86	04 00	10 31	00 00
	Decrement		BE EF	03	06 00	BF 87	05 00	10 31	00 00
Auto Search	Set	TURN OFF	BE EF	03	06 00	B6 D6	01 00	16 20	00 00
		TURN ON	BE EF	03	06 00	26 D7	01 00	16 20	01 00
	Get		BE EF	03	06 00	85 D6	02 00	16 20	00 00
Blank Color	Set	My Screen	BE EF	03	06 00	FB CA	01 00	00 30	20 00
		Original	BE EF	03	06 00	FB E2	01 00	00 30	40 00
		Blue	BE EF	03	06 00	CB D3	01 00	00 30	03 00
		White	BE EF	03	06 00	6B D0	01 00	00 30	05 00
		Black	BE EF	03	06 00	9B D0	01 00	00 30	06 00
	Get		BE EF	03	06 00	08 D3	02 00	00 30	00 00
Blank on/off	Set	TURN OFF	BE EF	03	06 00	FB D8	01 00	20 30	00 00
		TURN ON	BE EF	03	06 00	6B D9	01 00	20 30	01 00
	Get		BE EF	03	06 00	C8 D8	02 00	20 30	00 00
Startup	Set	My Screen	BE EF	03	06 00	CB CB	01 00	04 30	20 00
		Original	BE EF	03	06 00	0B D2	01 00	04 30	00 00
		TURN OFF	BE EF	03	06 00	9B D3	01 00	04 30	01 00
	Get		BE EF	03	06 00	38 D2	02 00	04 30	00 00
Menu Position V	Get		BE EF	03	06 00	40 D7	02 00	16 30	00 00
	Increment		BE EF	03	06 00	26 D7	04 00	16 30	00 00
	Decrement		BE EF	03	06 00	F7 D6	05 00	16 30	00 00
Menu Position V Reset	Execute		BE EF	03	06 00	A8 C7	06 00	44 70	00 00
Menu Position H	Get		BE EF	03	06 00	04 D7	02 00	15 30	00 00
	Increment		BE EF	03	06 00	62 D7	04 00	15 30	00 00
	Decrement		BE EF	03	06 00	B3 D6	05 00	15 30	00 00
Menu Position H Reset	Execute		BE EF	03	06 00	DC C6	06 00	43 70	00 00
Message	Set	TURN OFF	BE EF	03	06 00	8F D6	01 00	17 30	00 00
		TURN ON	BE EF	03	06 00	1F D7	01 00	17 30	01 00
	Get		BE EF	03	06 00	BC D6	02 00	17 30	00 00

(This table is continued to the following page.)

CP-X1200(P5XLA) / CP-X1250(P5XMLA) / CP-X1200WA(P5XMLB)

Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Volume	Get		BE EF	03	06 00	31 D3	02 00	01 20	00 00
	Increment		BE EF	03	06 00	57 D3	04 00	01 20	00 00
	Decrement		BE EF	03	06 00	86 D2	05 00	01 20	00 00
Mute	Set	TURN ON	BE EF	03	06 00	46 D3	01 00	02 20	00 00
		TURN OFF	BE EF	03	06 00	D6 D2	01 00	02 20	01 00
	Get		BE EF	03	06 00	75 D3	02 00	02 20	00 00
Lamp Time	Get		BE EF	03	06 00	C2 FF	02 00	90 10	00 00
Lamp Time Reset	Execute		BE EF	03	06 00	58 DC	06 00	30 70	00 00
Filter Time	Get		BE EF	03	06 00	C2 F0	02 00	A0 10	00 00
Filter Time Reset	Execute		BE EF	03	06 00	98 C6	06 00	40 70	00 00
Magnify	Get		BE EF	03	06 00	7C D2	02 00	07 30	00 00
	Increment		BE EF	03	06 00	1A D2	04 00	07 30	00 00
	Decrement		BE EF	03	06 00	CB D3	05 00	07 30	00 00
Freeze	Set	Normal	BE EF	03	06 00	83 D2	01 00	02 30	00 00
		Freeze	BE EF	03	06 00	13 D3	01 00	02 30	01 00
	Get		BE EF	03	06 00	B0 D2	02 00	02 30	00 00
Power	Set	TURN OFF	BE EF	03	06 00	2A D3	01 00	00 60	00 00
		TURN ON	BE EF	03	06 00	BA D2	01 00	00 60	01 00
	Get		BE EF	03	06 00	19 D3	02 00	00 60	00 00
			(Example Return) 00 00 (Off) 01 00 (On) 02 00 (Cool down)						
Input Source	Set	M1-D	BE EF	03	06 00	0E D2	01 00	00 20	03 00
		RGB	BE EF	03	06 00	FE D2	01 00	00 20	00 00
		BNC	BE EF	03	06 00	3E D0	01 00	00 20	04 00
		Video	BE EF	03	06 00	6E D3	01 00	00 20	01 00
		S-Video	BE EF	03	06 00	9E D3	01 00	00 20	02 00
		Component	BE EF	03	06 00	AE D1	01 00	00 20	05 00
	Get		BE EF	03	06 00	CD D2	02 00	00 20	00 00
Error Status	Get		BE EF	03	06 00	D9 D8	02 00	20 60	00 00
			(Example of Return) 00 00 (Normal) 01 00 (Cover-error) 02 00 (Fan-error) 03 00 (Lamp-error) 04 00 (Temp-error) 05 00 (Air flow-error) 06 00 (Lamp-Time-over) 07 00 (Cool-error) 08 00 (Filter-Error)						

(This table is continued to the following page.)

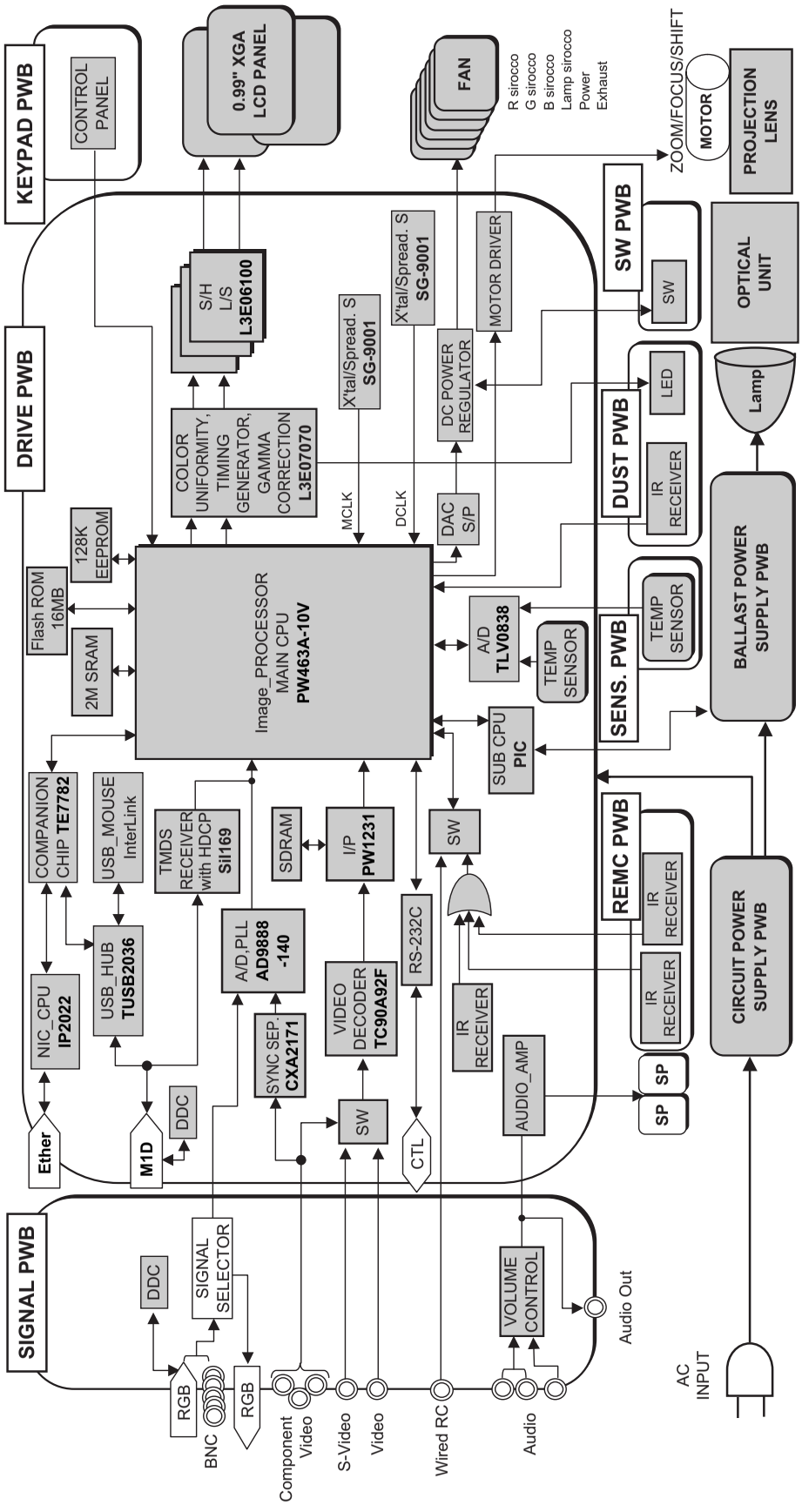
Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
PinP Size	Set	Off	BE EF	03	06 00	FE 22	01 00	00 23	00 00
		Large	BE EF	03	06 00	6E 23	01 00	00 23	01 00
		Small	BE EF	03	06 00	9E 23	01 00	00 23	02 00
	Get		BE EF	03	06 00	CD 22	02 00	00 23	00 00
PinP Position	Set	Upper Left	BE EF	03	06 00	02 23	01 00	01 23	00 00
		Upper Right	BE EF	03	06 00	92 22	01 00	01 23	01 00
		Bottom Left	BE EF	03	06 00	62 22	01 00	01 23	02 00
		Bottom Right	BE EF	03	06 00	F2 23	01 00	01 23	03 00
	Get		BE EF	03	06 00	31 23	02 00	01 23	00 00
PinP Audio Ch	Set	RGB	BE EF	03	06 00	BA 22	01 00	03 23	00 00
		Video	BE EF	03	06 00	2A 23	01 00	03 23	01 00
	Get		BE EF	03	06 00	89 22	02 00	03 23	00 00
PinP Input	Set	Video	BE EF	03	06 00	D6 22	01 00	02 23	01 00
		S-Video	BE EF	03	06 00	26 22	01 00	02 23	02 00
	Get		BE EF	03	06 00	75 23	02 00	02 23	00 00
Myscreen size	Set	Full	BE EF	03	06 00	43 D6	01 00	12 30	00 00
		X1	BE EF	03	06 00	D3 D7	01 00	12 30	01 00
	Get		BE EF	03	06 00	70 D6	02 00	12 30	00 00
Myscreen Lock	Set	Off	BE EF	03	06 00	3B EF	01 00	C0 30	00 00
		On	BE EF	03	06 00	AB EE	01 00	C0 30	01 00
	Get		BE EF	03	06 00	08 EF	02 00	C0 30	00 00
IR Remote Front	Set	Off	BE EF	03	06 00	FF 32	01 00	00 26	00 00
		On	BE EF	03	06 00	6F 33	01 00	00 26	01 00
	Get		BE EF	03	06 00	CC 32	02 00	00 26	00 00
IR Remote Rear	Set	Off	BE EF	03	06 00	03 33	01 00	01 26	00 00
		On	BE EF	03	06 00	93 32	01 00	01 26	01 00
	Get		BE EF	03	06 00	30 33	02 00	01 26	00 00
IR Remote Top	Set	Off	BE EF	03	06 00	47 33	01 00	02 26	00 00
		On	BE EF	03	06 00	D7 32	01 00	02 26	01 00
	Get		BE EF	03	06 00	74 33	02 00	02 26	00 00

(This table is continued to the following page.)

CP-X1200(P5XLA) / CP-X1250(P5XMLA) / CP-X1200WA(P5XMLB)

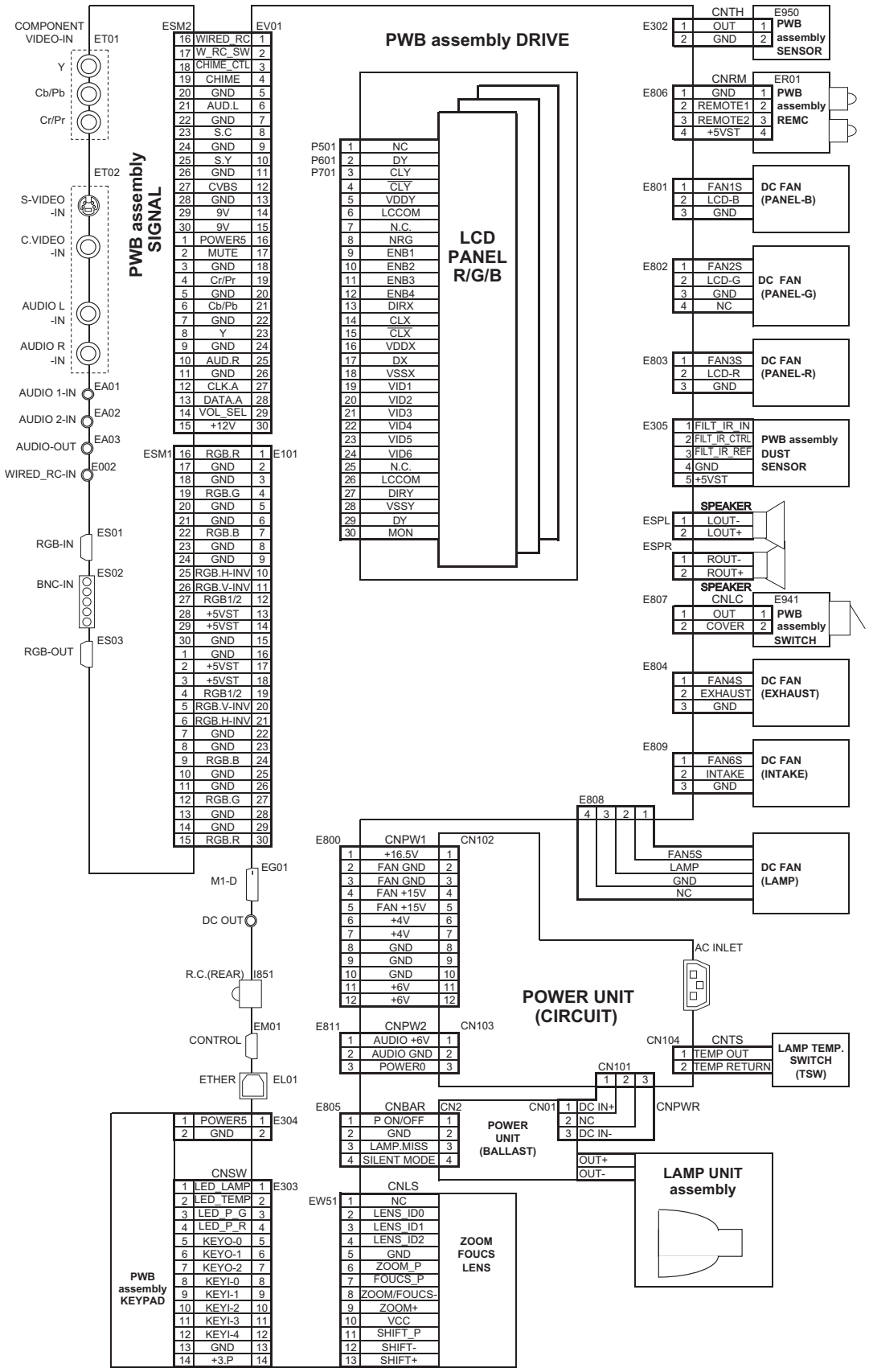
Names	Operation type		Header			CRC	Command data		
							Action	Type	Setting code
Power Up Source	Set	Last Ch	BE EF	03	06 00	9E D9	01 00	18 20	10 00
		M1-D	BE EF	03	06 00	AE D4	01 00	18 20	03 00
		RGB	BE EF	03	06 00	5E D4	01 00	18 20	00 00
		BNC	BE EF	03	06 00	9E D6	01 00	18 20	04 00
		Component	BE EF	03	06 00	0E D7	01 00	18 20	05 00
		S-Video	BE EF	03	06 00	3E D5	01 00	18 20	02 00
		Video	BE EF	03	06 00	CE D5	01 00	18 20	01 00
	Get		BE EF	03	06 00	6D D4	02 00	18 20	00 00
Auto Adjust Enable	Set	DISABLE	BE EF	03	06 00	A2 D5	01 00	19 20	00 00
		ENABLE	BE EF	03	06 00	32 D4	01 00	19 20	01 00
	Get		BE EF	03	06 00	91 D5	02 00	19 20	00 00
Internal Speaker	Set	TURN OFF	BE EF	03	06 00	6E D5	01 00	1C 20	00 00
		TURN ON	BE EF	03	06 00	FE D4	01 00	1C 20	01 00
	Get		BE EF	03	06 00	5D D5	02 00	1C 20	00 00
Lens Lock	Set	TURN OFF	BE EF	03	06 00	FF 97	01 00	10 24	00 00
		TURN ON	BE EF	03	06 00	6F 96	01 00	10 24	01 00
	Get		BE EF	03	06 00	CC 97	02 00	10 24	00 00
Remote ID	Set	All	BE EF	03	06 00	9F 30	01 00	08 26	00 00
		1	BE EF	03	06 00	0F 31	01 00	08 26	01 00
		2	BE EF	03	06 00	FF 31	01 00	08 26	02 00
		3	BE EF	03	06 00	6F 30	01 00	08 26	03 00
	Get		BE EF	03	06 00	AC 30	02 00	08 26	00 00
Auto Power On	Set	TURN OFF	BE EF	03	06 00	3B 89	01 00	20 31	00 00
		TURN ON	BE EF	03	06 00	AB 88	01 00	20 31	01 00
	Get		BE EF	03	06 00	08 89	02 00	20 31	00 00
Lens	Set	AUTO	BE EF	03	06 00	3F D8	01 00	70 25	00 00
		1	BE EF	03	06 00	AF D9	01 00	70 25	01 00
		2	BE EF	03	06 00	5F D9	01 00	70 25	02 00
		3	BE EF	03	06 00	CF D8	01 00	70 25	03 00
		4	BE EF	03	06 00	FF DA	01 00	70 25	04 00
		5	BE EF	03	06 00	6F DB	01 00	70 25	05 00
	Get		BE EF	03	06 00	0C D8	02 00	70 25	00 00

11. Block diagram



Block diagram (P5XLA/P5XMLA/P5XMLB)

12. Connector connection diagram



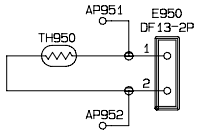
Connector connection diagram (P5XLA/P5XMLA/P5XMLB)

13. Basic circuit diagrams

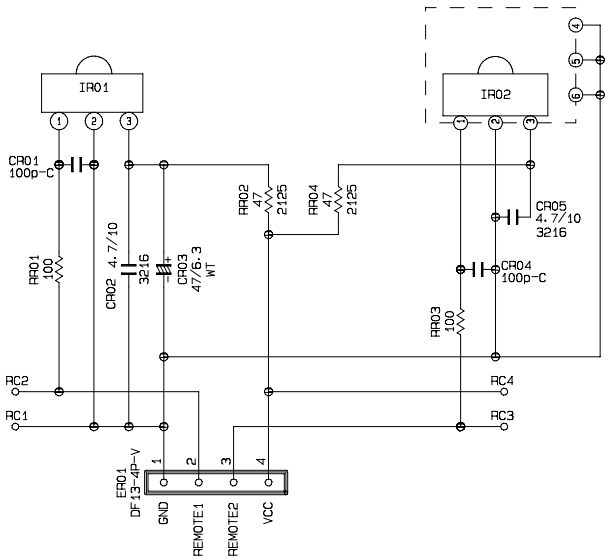
Basic circuit diagram list

PWB SENSOR
PWB REMOTE CONTROL
PWB LIMIT SWITCH
POWER UNIT (BALLAST)
POWER UNIT (CIRCUIT)
PWB DRIVE 1
PWB DRIVE 2
PWB DRIVE 3
PWB DRIVE 4
PWB DRIVE 5
PWB DRIVE 6
PWB DRIVE 7
PWB DRIVE 8
PWB DRIVE 9
PWB DRIVE 10
PWB DRIVE 11
PWB DRIVE 12
PWB DRIVE 13
PWB DRIVE 14
PWB DRIVE 15
PWB DRIVE 16
PWB SIGNAL 1
PWB SIGNAL 2
PWB KEYPAD
PWB DUST SENSOR

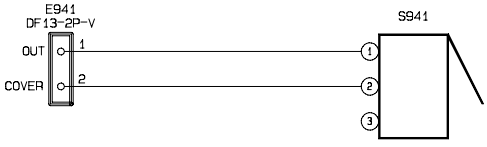
Parts with hatching are not mounted.



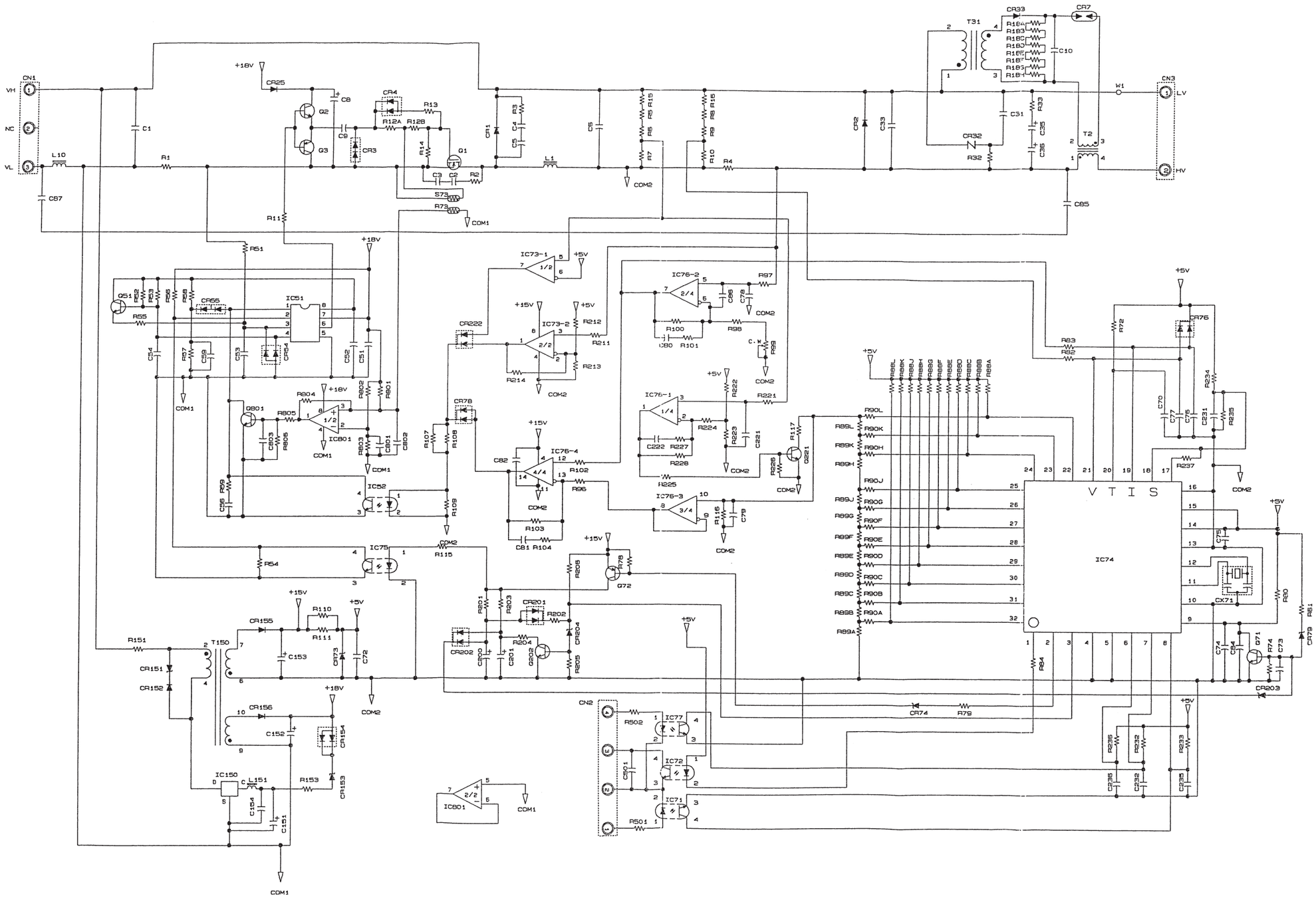
PWB assembly SENSOR
(P5XLA/P5XMLA/P5XMLB)



PWB assembly REMOTE CONTROL
(P5XLA/P5XMLA/P5XMLB)

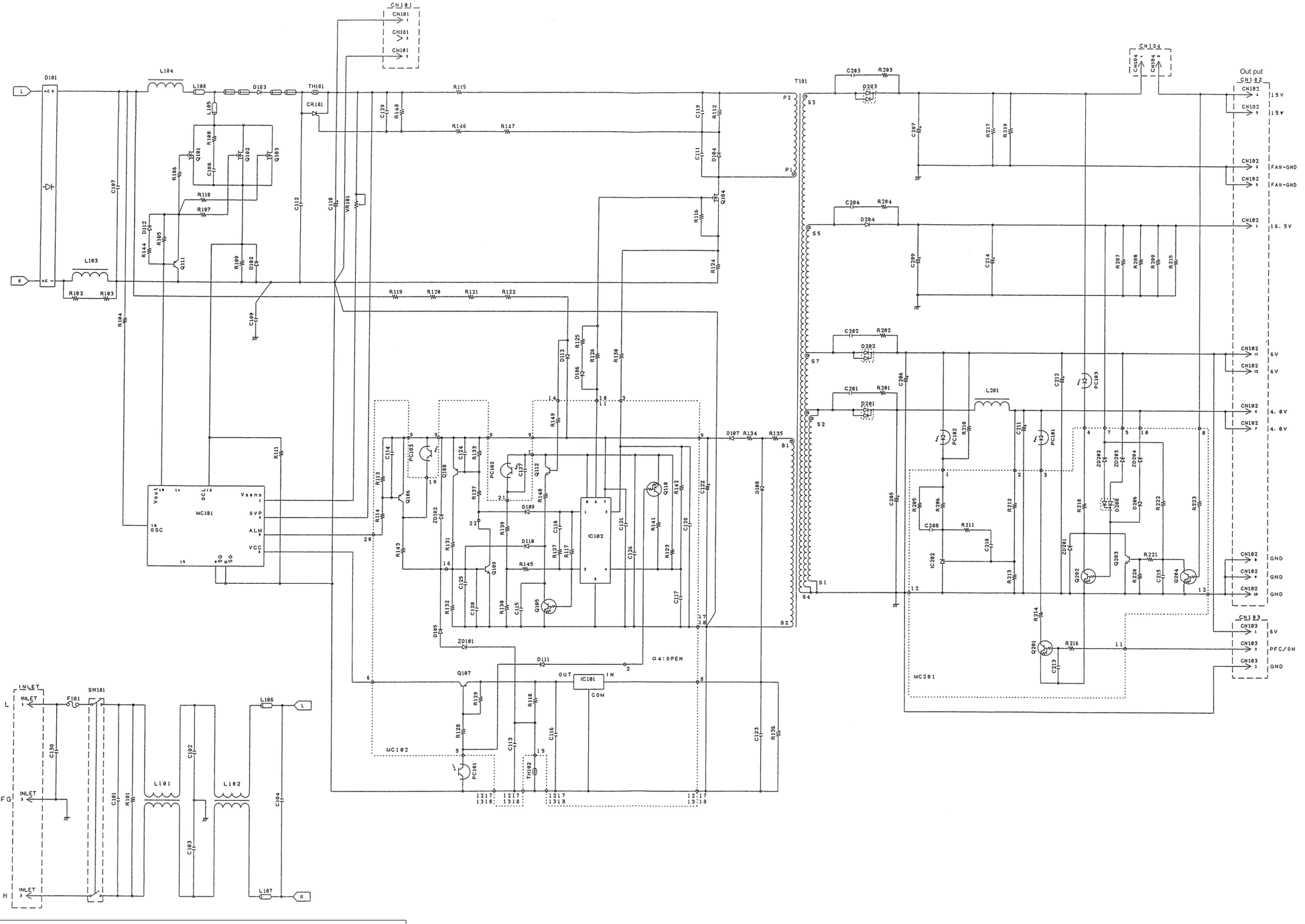


PWB assembly LIMIT SWITCH
(P5XLA/P5XMLA/P5XMLB)



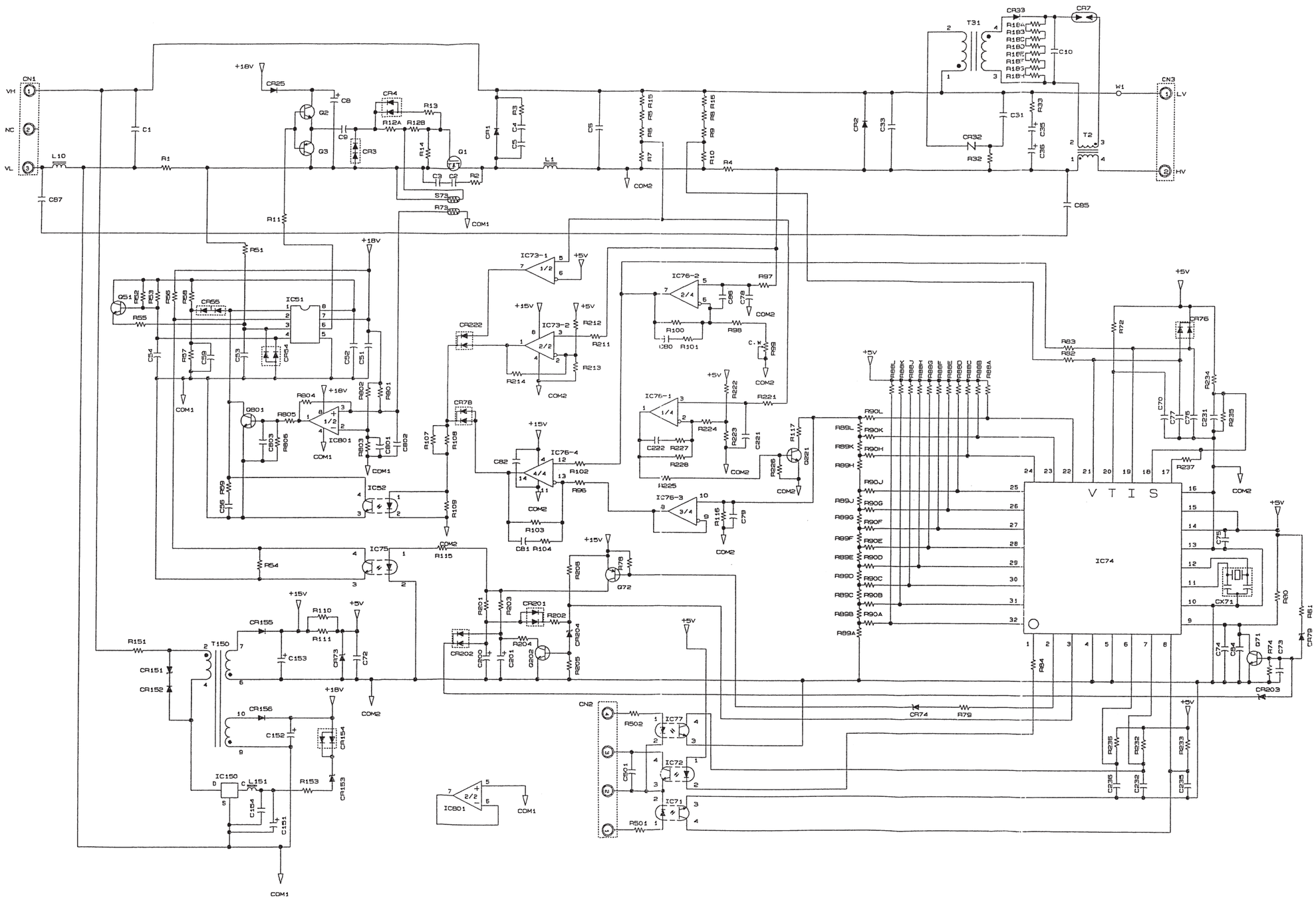
⚠ Warning
For handling of the circuit diagram, refer to the warning on the cover.

POWER UNIT (BALLAST) (P5XLA/P5XMLA)



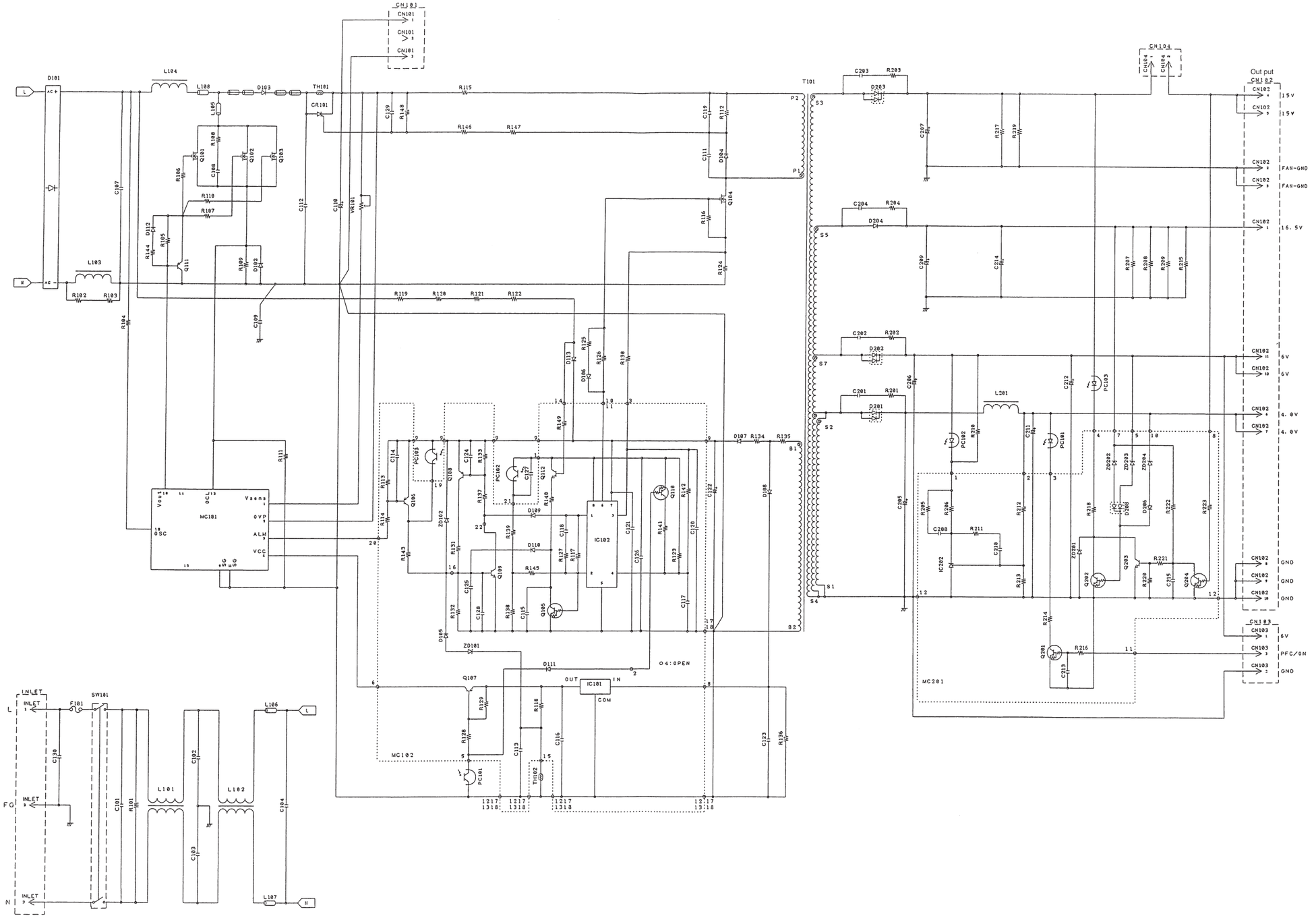
⚠ Warning
For handling of the circuit diagram, refer to the warning on the cover.

POWER UNIT (CIRCUIT) (P5XLA/P5XMLA)



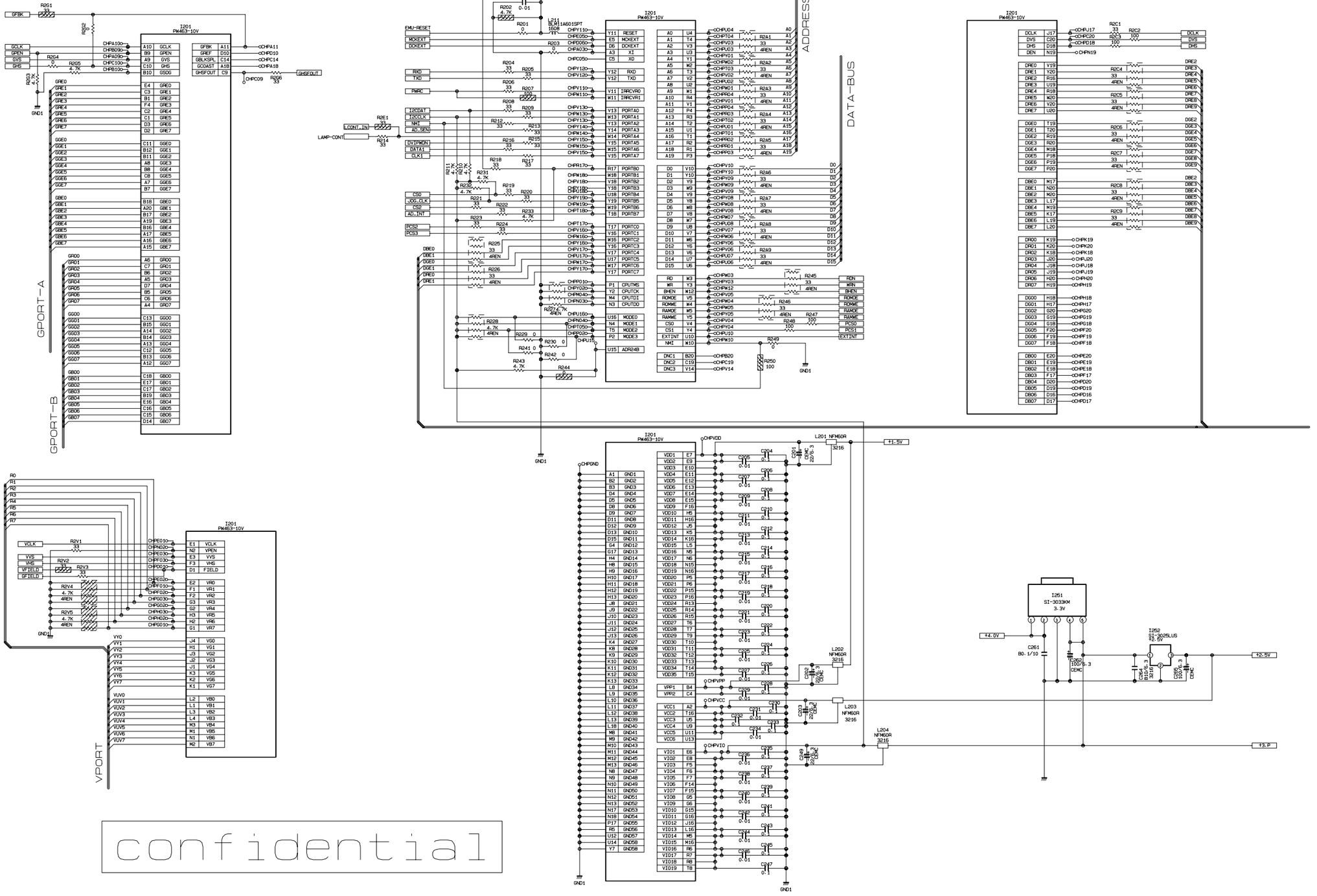
⚠ Warning
For handling of the circuit diagram, refer to the warning on the cover.

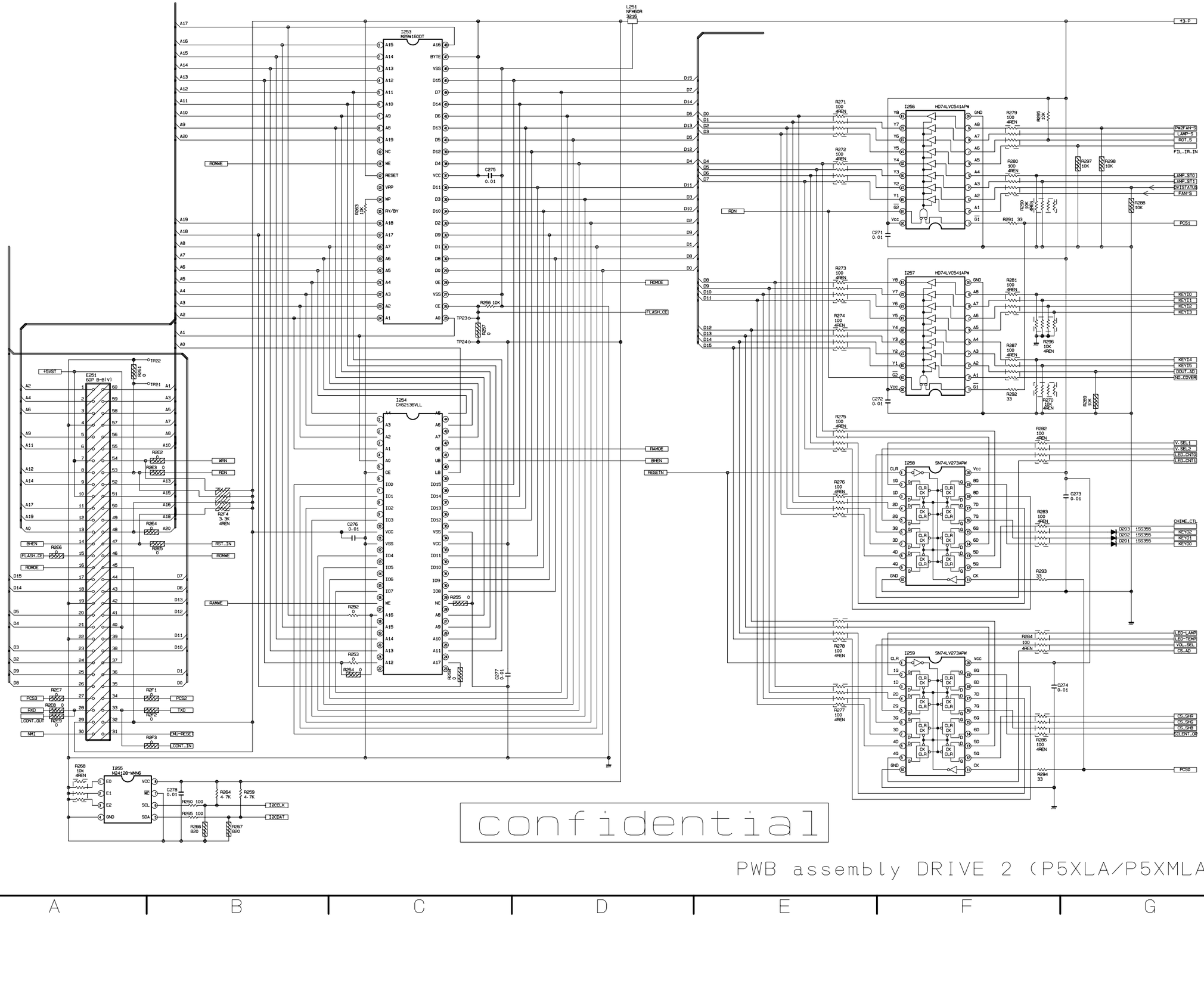
POWER UNIT (BALLAST) (P5XMLB)

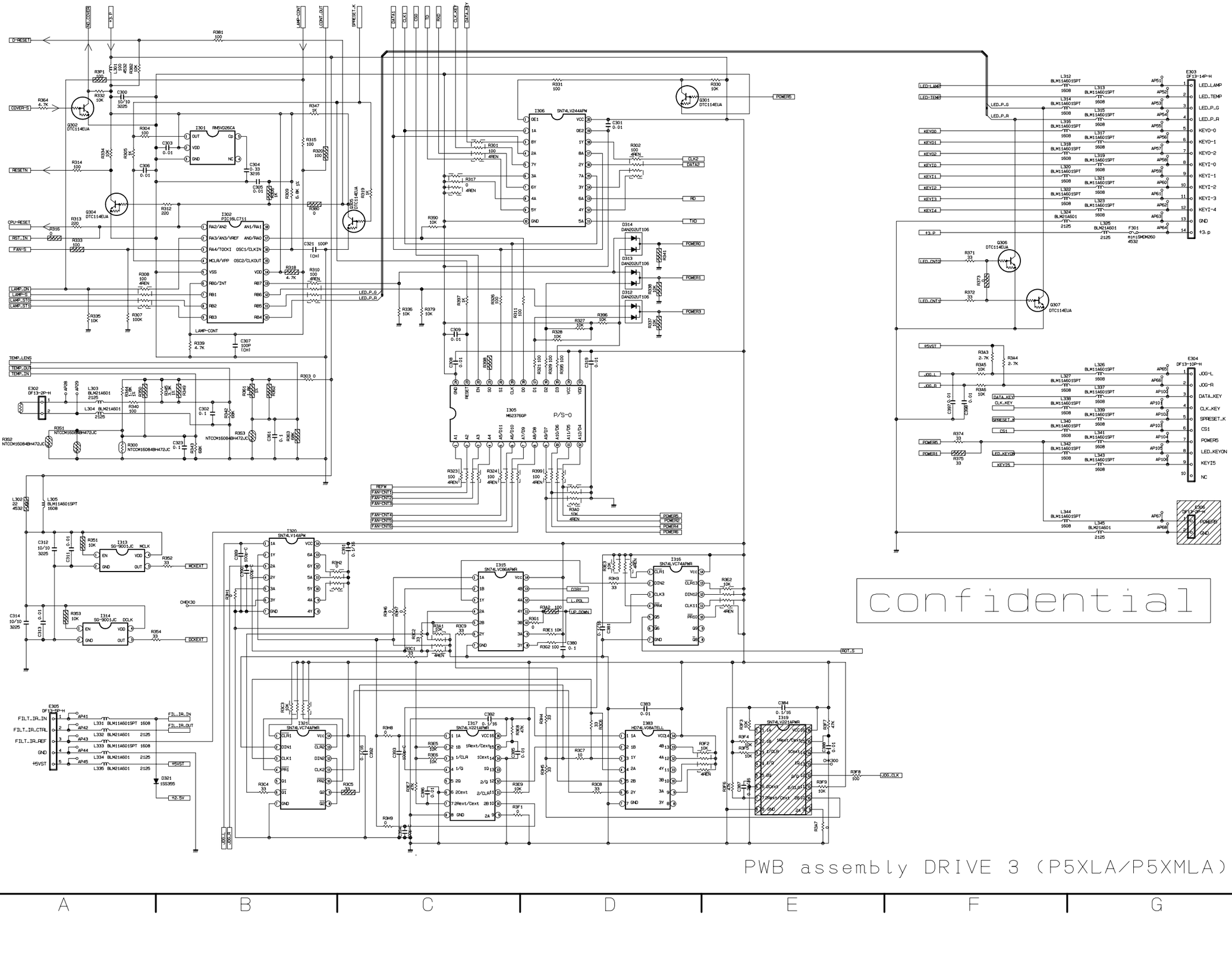


⚠ Warning
For handling of the circuit diagram, refer to the warning on the cover.

POWER UNIT (CIRCUIT) (P5XMLB)

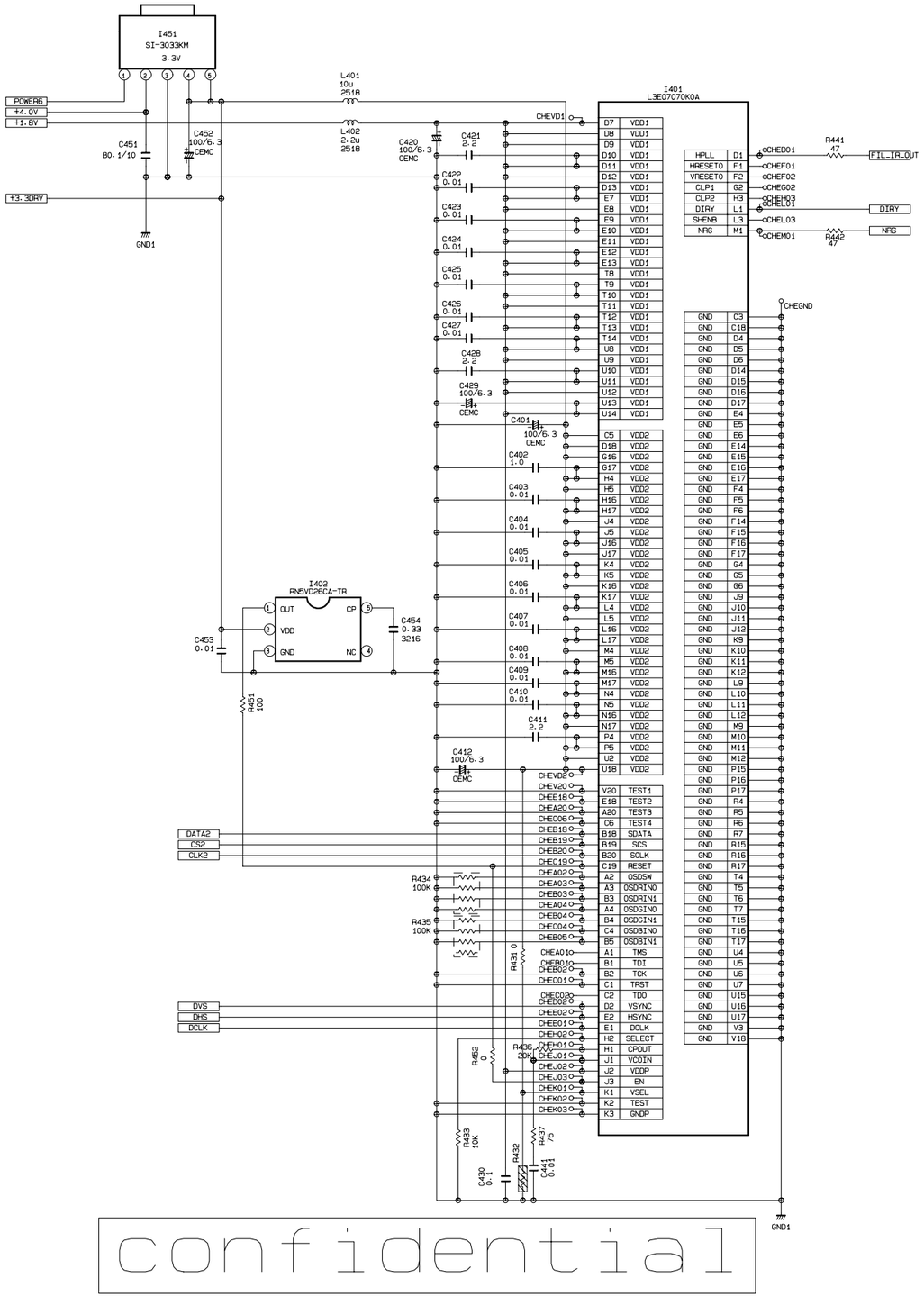

GPORT-A
GPORT-B
VPORT
ADDRESS-BUS
DATA-BUS
I201
PW463-10V
GND1
+1.5V
+4.0V
+2.5V
+3.P
SI-3033KM
3.3V
SI-3025LUS
2.5V
NFM60R
3216
confidential
PWB assembly DRIVE 1 (P5XLA/P5XMLA)


I253
M29W160DT
I254
CY62136VLL
I255
M24128-WMN6
I256
HD74LVC541APW
I257
HD74LVC541APW
I258
SN74LV273APW
I259
SN74LV273APW
L254
NFM60R
3216
E251
60P B-B(V)
+5VST
+3.P
ROMWE
RAMWE
ROMOE
RAMOE
FLASH_CE
BHEN
RESETN
RDN
WRN
RST_IN
EMU_RESET
CONT_IN
TXD
RXD
PCS2
PCS3
NMI
I2CCLK
I2CDAT
PW2FAN-S
LAMP-S
RDT_S
FIL_IR_IN
LAMP_STO
LAMP_STI
SYSTATUS
FAN-S
PCS1
KEY10
KEY11
KEY12
KEY13
KEY14
KEY15
ROOT_AD
NO_COVER
V_SEL1
V_SEL2
LED_CNT0
LED_CNT1
CHIME_CTL
KEY02
KEY01
KEY00
LED_LAMP
LED_TEMP
VOL_SEL
CS_AD
CS_SHR
CS_SHG
CS_SHB
SILENT_OP
PCS0
confidential
PWB assembly DRIVE 2 (P5XLA/P5XMLA)


D-RESET
COVER-S
RESETN
CPU-RESET
RST_IN
FAN-S
LAMP_ON
LAMP-S
LAMP_STS
LAMP_ST1
LAMP-CONT
TEMP_LENS
TEMP_OUT
TEMP_IN
LED-P_G
LED-P_R
CLK2
DATA2
RD
TXD
POWER0
POWER1
POWER3
POWER5
LED-LAMP
LED-TEMP
KEY00
KEY01
KEY02
KEY10
KEY11
KEY12
KEY13
KEY14
+3.P
LED_CNT0
LED_CNT1
+5VST
JOG-L
JOG-R
DATA_KEY
CLK_KEY
SPRESET_K
CS1
POWER5
POWER1
LED_KEYON
KEYI5
FILT_IR_IN
FILT_IR_CTRL
FILT_IR_REF
GND
+5VST
+2.5V
FIL_IR_IN
FIL_IR_OUT
MDREXT
DDREXT
CHEK30
DIRV
L_POL
LP_DOWN
ROT_S
JOG_CLK
CHK300
REFM
FAN-CNT1
FAN-CNT2
FAN-CNT3
FAN-CNT4
FAN-CNT5
FAN-CNT6
POWER5
POWER3
POWER4
POWER6
LED_LAMP
LED_TEMP
LED_P_G
LED_P_R
KEY-0
KEY-1
KEY-2
KEYI-0
KEYI-1
KEYI-2
KEYI-3
KEYI-4
GND
+3.p
JOG-L
JOG-R
DATA_KEY
CLK_KEY
SPRESET_K
CS1
POWER5
LED_KEYON
KEYI5
NC
POWER6
GND
P/S-0
SN74LV244APW
SN74LV74APWR
SN74LV08APWR
SN74LV221APWR
HD74LV08ATELL
SG-9001JC
PIC16LC711
RN5VD26CA
DAN202UT106
DTC114EUA
BLM11A601SPT
BLM21A601
NTCCM1608B472JC
DF13-2P-H
DF13-5P-H
DF13-10P-H
DF13-3P-H
confidential
PWB assembly DRIVE 3 (P5XLA/P5XMLA)

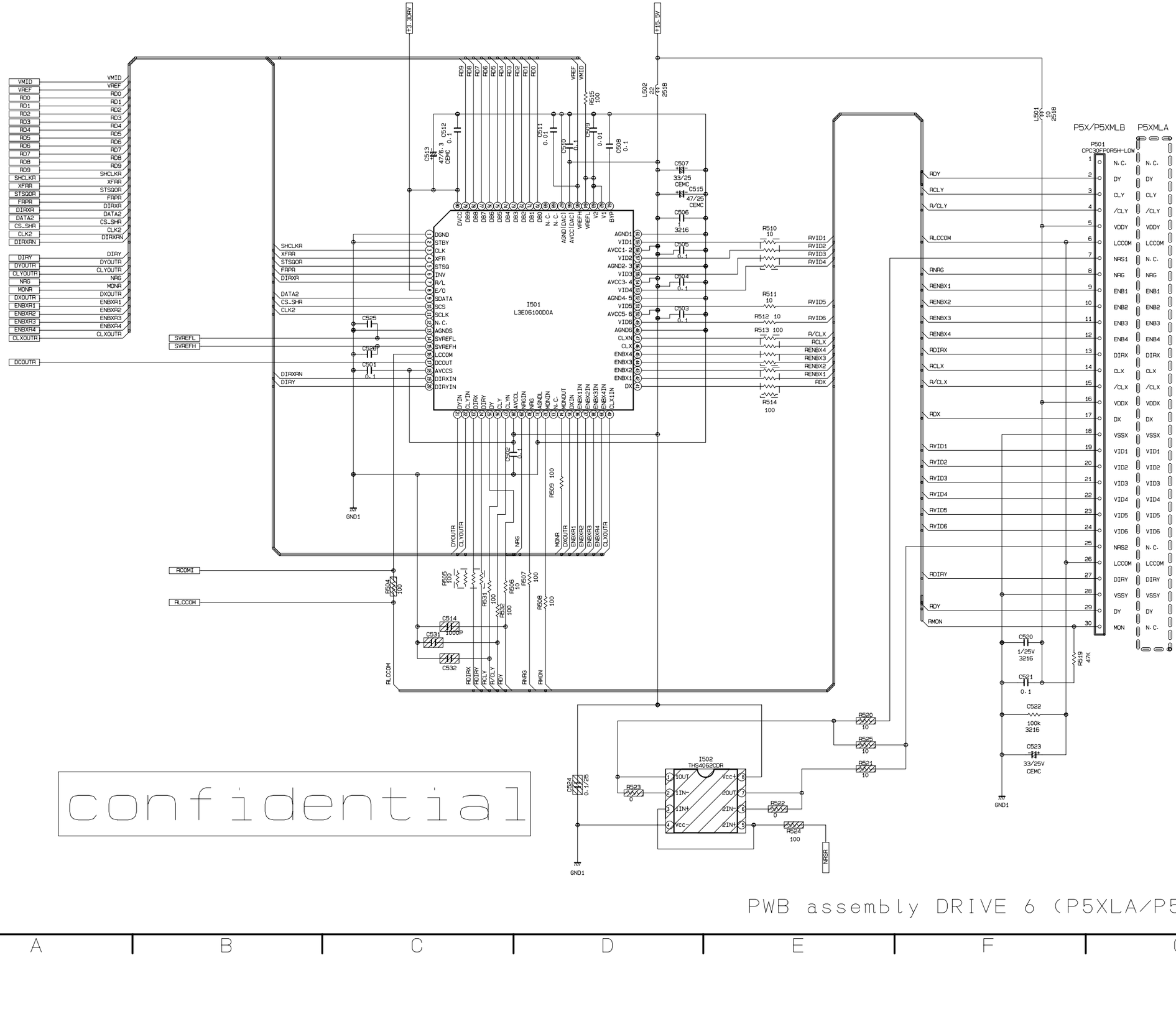
confidential

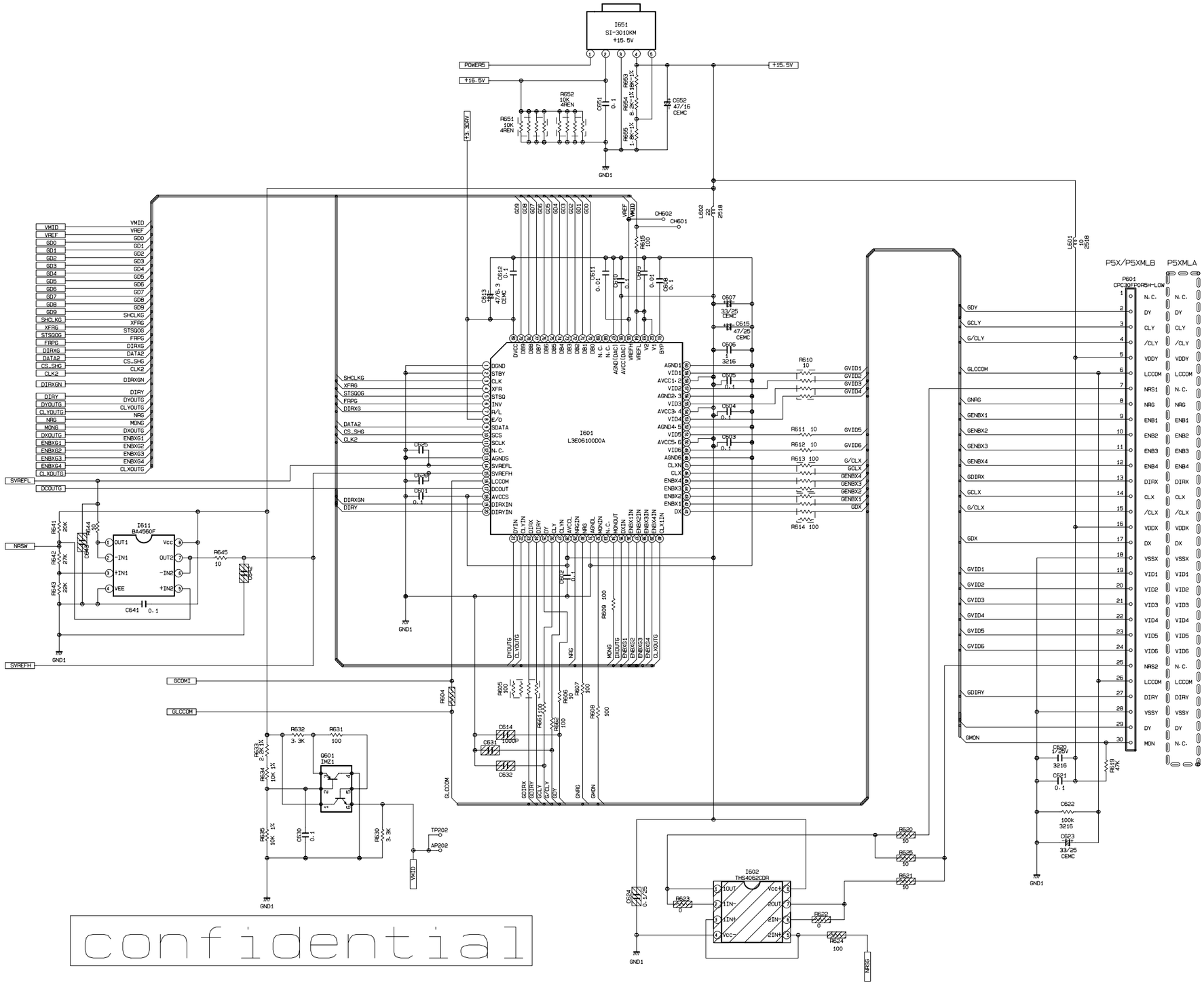
PWB assembly DRIVE 4 (P5XLA/P5XMLA)



confidential

PWB assembly DRIVE 5 (P5XLA/P5XMLA)

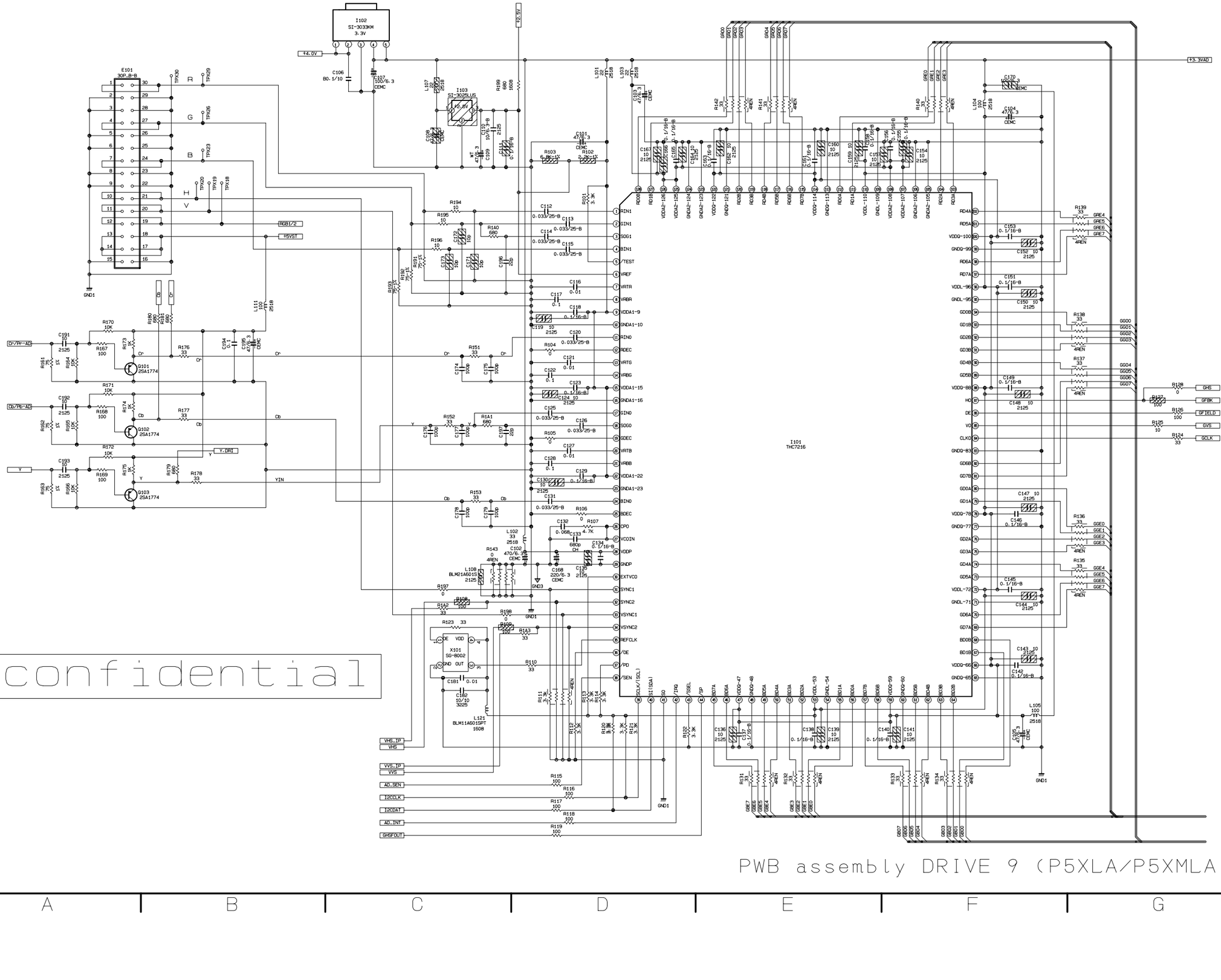

+3.3ARV
+15.5V
I501
L3E06100D0A
I502
THS4062CDR
P501
CPC30FP0R5H-LOW
P5X/P5XMLB
P5XMLA
GND1
confidential
PWB assembly DRIVE 6 (P5XLA/P5XMLA)


I651
SI-3010KM
+15.5V
POWER5
+16.5V
+15.5V
+3.3ARV
R652
10K
4REN
R651
10K
4REN
C651
0.1
R653
1%
R654
1%
R655
1%
C652
47/16
CEMC
GND1
VMID
VREF
GD0
GD1
GD2
GD3
GD4
GD5
GD6
GD7
GD8
GD9
SHCLKG
XFRG
STSQG6
FRPG
DIRXG
DATA2
CS_SHG
CLK2
DIRXGN
DIRY
DYOUTG
CLYOUTG
NRG
MONG
DXOUTG
ENBXG1
ENBXG2
ENBXG3
ENBXG4
CLXOUTG
SVREFL
DCOUTG
I601
L3E06100D0A
DGND
STBY
CLK
XFR
STSQ
INV
R/L
E/O
SDATA
SCS
SCLK
N.C.
AGNDS
SVREFL
SVREFH
LCCOM
DCOUT
AVCCS
DIRXIN
DIRYIN
AGND1
VID1
AVCC1-2
VID2
AGND2-3
VID3
AVCC3-4
VID4
AGND4-5
VID5
AVCC5-6
VID6
AGND6
CLXN
CLX
ENBX4
ENBX3
ENBX2
ENBX1
DX
C601
0.1
C605
0.1
C606
3216
C607
33/25
CEMC
C615
47/25
CEMC
C612
0.1
C613
47/3
CEMC
C611
0.01
C610
0.1
C609
0.01
C608
0.1
CH602
CH601
R601
100
L602
2518
L601
2518
R610
10
R611 10
R612 10
R613 100
R614 100
GVID1
GVID2
GVID3
GVID4
GVID5
GVID6
G/CLX
GCLX
GENBX4
GENBX3
GENBX2
GENBX1
GDX
R609 100
C602
0.1
R641
20K
R644
33
C642
0.1
I611
BA4560F
OUT1
-IN1
+IN1
VEE
Vcc
OUT2
-IN2
+IN2
R642
27K
R643
22K
C641
0.1
R645
10
C643
0.1
NRSW
SVREFH
GCOMI
GLCCOM
R632
3.3K
R631
100
R633
2.2K
R634
10K 1%
Q601
IMZ1
R635
10K 1%
C630
0.1
R630
3.3K
TP202
AP202
VMID
C614
C631 1000P
C632
R604
R605 100
R606 10
R607 100
R608 100
R661 100
R662 100
GDIRX
GDIRY
GCLKY
GDY
GNRG
GMON
P5X/P5XMLB
P5XMLA
P601
CPC30FPORSH-LOW
N.C.
DY
CLY
/CLY
VDDY
LCCOM
NRS1
NRG
ENB1
ENB2
ENB3
ENB4
DIRX
CLX
/CLX
VDDX
DX
VSSX
VID1
VID2
VID3
VID4
VID5
VID6
NRS2
LCCOM
DIRY
VSSY
DY
MON
GDY
GCLY
G/CLY
GLCCOM
GNRG
GENBX1
GENBX2
GENBX3
GENBX4
GDIRX
GCLX
G/CLX
GDX
GVID1
GVID2
GVID3
GVID4
GVID5
GVID6
GDIRY
GMON
C620
1/25V
3216
C621
0.1
R619
47K
C622
100k
3216
C623
33/25
CEMC
I602
THS4062CDR
1OUT
1IN-
1IN+
Vcc-
Vcc+
2OUT
2IN-
2IN+
C624
0.1/25
R623
0
R622
0
R624
100
R620
10
R625
10
R621
10
NRSS
confidential
PWB assembly DRIVE 7 (P5XLA/P5XMLA)

confidential

P5X/P5XMLB P5XMLA

PWB assembly DRIVE 8 (P5XLA/P5XMLA)

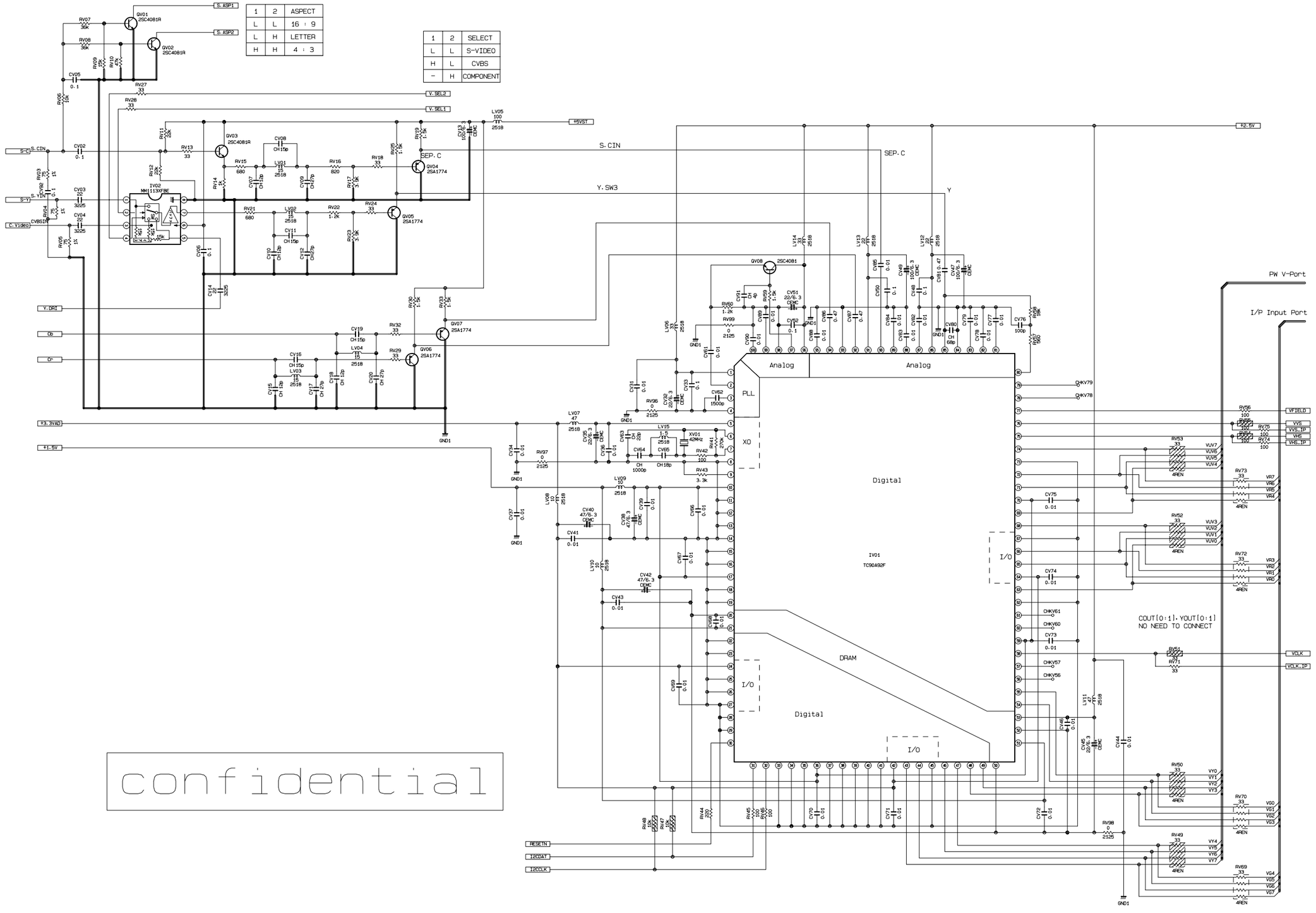


confidential

PWB assembly DRIVE 9 (P5XLA/P5XMLA)

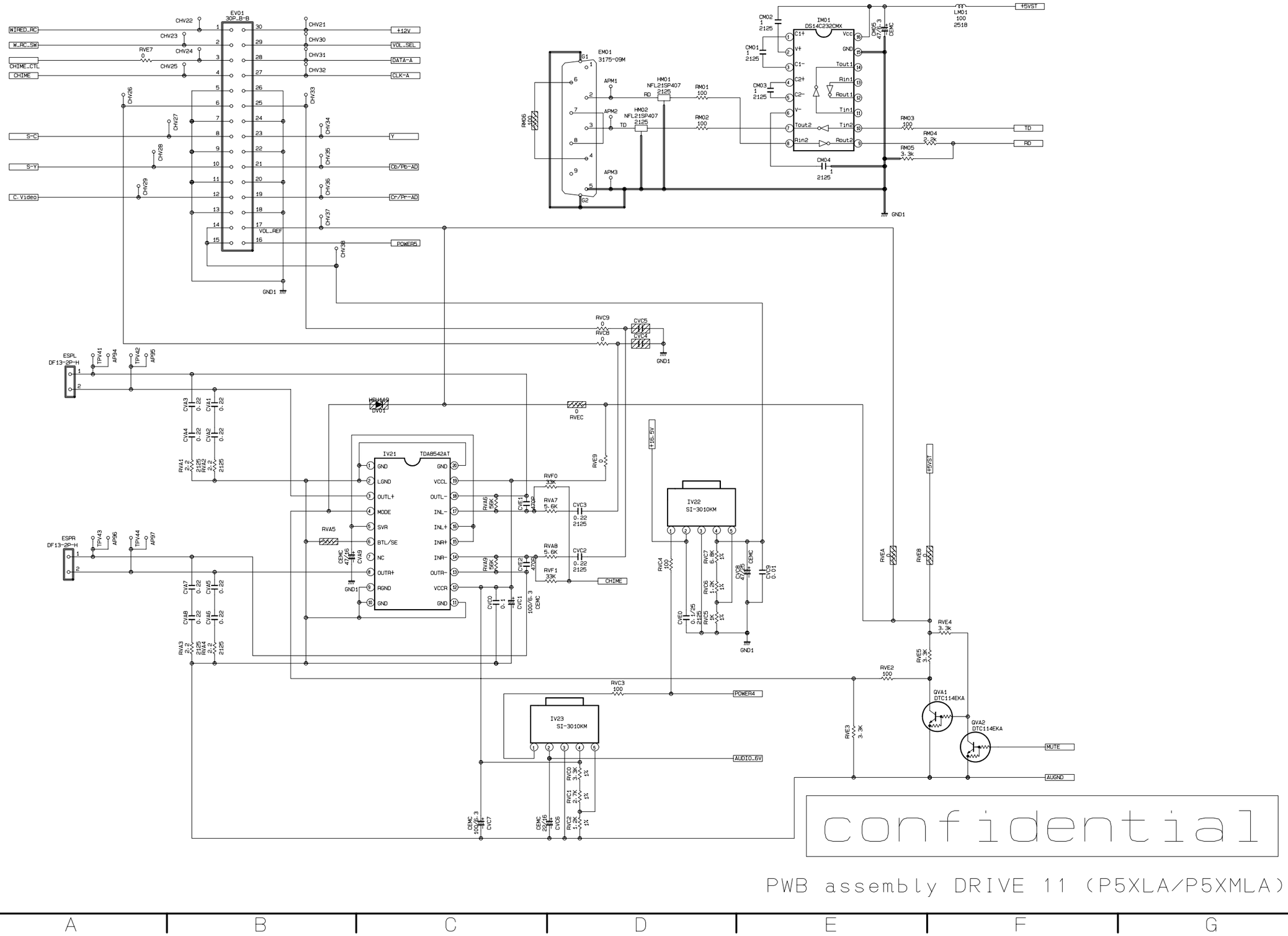
1	2	ASPECT
L	L	16 : 9
L	H	LETTER
H	H	4 : 3

1	2	SELECT
L	L	S-VIDEO
H	L	CVBS
-	H	COMPONENT



confidential

PWB assembly DRIVE 10 (P5XLA/P5XMLA)

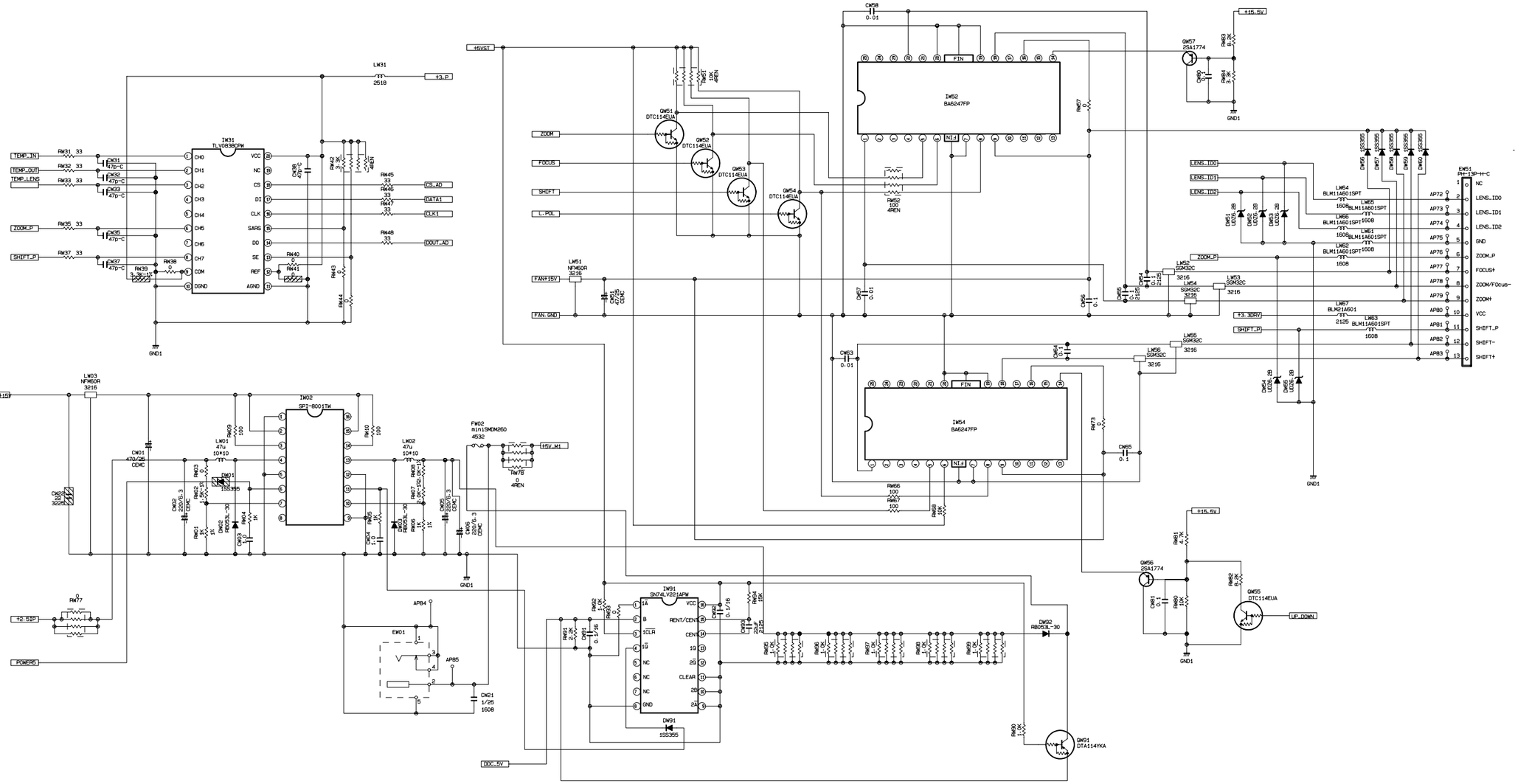

EV01
30P_B-B
WIRED_RC
W_RC_SW
CHIME_CTL
CHIME
+12V
VOL_SEL
DATA-A
CLK-A
S-C
Y
S-Y
CD/PD-AD
C.Video
Cr/Pr-AD
VOL_REF
POWER5
GND1
EM01
3175-09M
APM1
APM2
APM3
HM01
NFL21SP407
HM02
NFL21SP407
RD
TD
IM01
DS14C232CMX
C1+
V+
C1-
C2+
C2-
V-
Vcc
GND
Tout1
Rin1
Rout1
Tin1
Tout2
Rin2
Rout2
+5VST
TD
RD
GND1
ESPL
DF13-2P-H
ESPR
DF13-2P-H
IV21
TDA8542AT
GND
LGND
OUTL+
MODE
SVR
BTL/SE
NC
OUTR+
RGND
GND
VCCL
OUTL-
INL-
INL+
INR+
INR-
OUTR-
VCCR
GND
CHIME
IV22
SI-3010KM
IV23
SI-3010KM
POWER4
AUDIO_6V
+16.5V
+5VST
QVA1
DTC114EKA
QVA2
DTC114EKA
MUTE
AUGND
confidential
PWB assembly DRIVE 11 (P5XLA/P5XMLA)

B-PORT

A-PORT

confidential

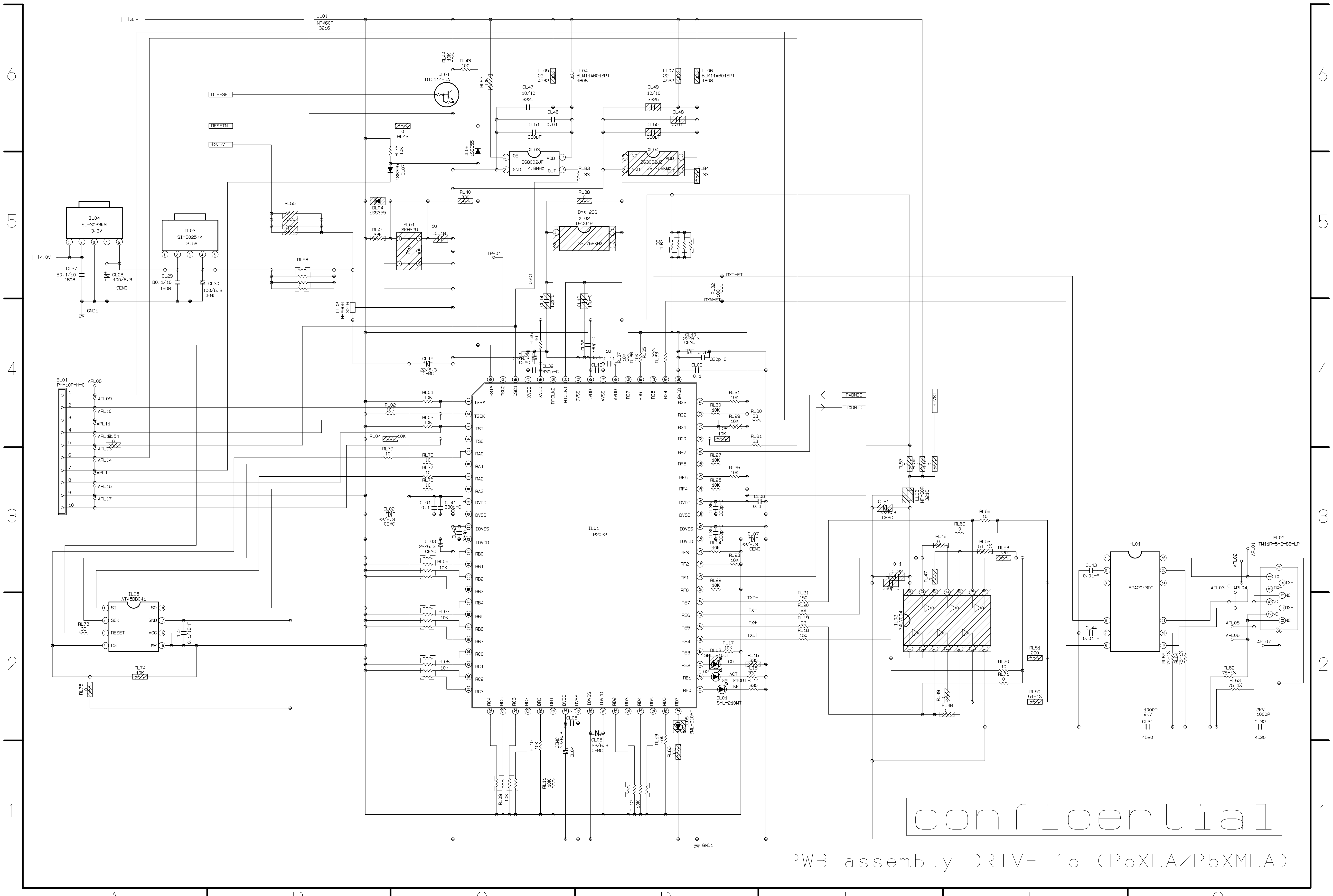
PWB assembly DRIVE 12 (P5XLA/P5XMLA)


IW31
TLV0838CPW
TEMP_IN
TEMP_OUT
TEMP_LENS
ZOOM_P
SHIFT_P
CS_AD
DATA1
CLK1
DOUT_AD
GND1
IW52
BA6247FP
IW54
BA6247FP
ZOOM
FOCUS
SHIFT
L-POL
FAN+15V
FAN_GND
+5VST
+15.5V
+3.3DRV
LENS_ID0
LENS_ID1
LENS_ID2
EW51
IW02
SPI-8001TW
IW91
SN74LVQ81APW
DW91
1SS355
DW92
RB051L-30
QW91
DTA114YKA
QW55
DTC114EUA
QW56
2SA1774
QW57
2SA1774
UP_DOWN
DDC_5V
+2.5IP
POWER5
+5V_M1
confidential
PWB assembly DRIVE 13 (P5XLA/P5XMLA)

ID0	ID1	
L	L	Hitachi
L	L	I/F
H	L	Proxima
L	H	ASK

confidential

PWB assembly DRIVE 14 (P5XLA/P5XMLA)



+3.P
LL01 NFM60R 3216
D-RESET
RESETN
+2.5V
+4.0V
IL04 SI-3033KM 3.3V
IL03 SI-3025KM +2.5V
CL27 B0.1/10 1608
CL28 100/6.3 CEMC
CL29 B0.1/10 1608
CL30 100/6.3 CEMC
GND1
RL55
RL56
LL02 NFM60R 3216
QL01 DTC114EUA
RL44 10K
RL43 100
RL82 10K
RL42 0
RL72 10K
DL07 1SS355
DL06 1SS355
DL04 1SS355
RL40 330
RL41 33K
SL01 SKHMPU
CL18 1u
TPE01
LL05 22 4532
LL04 BLM11A601SPT 1608
CL47 10/10 3225
CL46 0.01
CL51 330pF
XL03 SG8002JF 4.8MHz
OE GND VDD OUT
RL83 33
LL07 22 4532
LL06 BLM11A601SPT 1608
CL49 10/10 3225
CL48 0.01
CL50 330pF
XL04 SG3032JC 32.768KHz
NC GND VDD OUT
RL84 33
RL38 0
DMX-26S XL02 DP004P 32.768KHz
RL67 33
RXP-ET
RL32 100
RXM-ET
OSC1
CL14 10p-C
CL13 10p-C
RL45 10
CL20 22/6.3 CEMC
CL39 330p-C
CL38 330p-C
CL12 0.1
CL11 1u
RL37 10K
RL36 10K
RL35
RL33
CL10 22/6.3 CEMC
CL37 330p-C
CL09 0.1
CL19 22/6.3 CEMC
EL01 PH-10P-H-C
APL08 APL09 APL10 APL11 APL12 APL13 APL14 APL15 APL16 APL17
RL54 0
RL01 10K
RL02 10K
RL03 10K
RL04 10K
RL79 10
RL76 10
RL77 10
RL78 10
CL01 0.1
CL41 330p-C
CL02 22/6.3 CEMC
CL42 330p-C
CL03 22/6.3 CEMC
RL06 10K
RL07 10K
RL08 10K
IL01 IP2022
RST* OSC2 OSC1 XVSS XVDD RTCLK2 RTCLK1 DVSS DVDD AVSS AVDD RG7 RG6 RG5 RG4 GVDD
TSS* TSCK TSI TSO RA0 RA1 RA2 RA3 DVDD DVSS IOVSS IOVDD RB0 RB1 RB2 RB3 RB4 RB5 RB6 RB7 RC0 RC1 RC2 RC3
RG3 RG2 RG1 RG0 RF7 RF6 RF5 RF4 DVDD DVSS IOVSS IOVDD RF3 RF2 RF1 RF0 RE7 RE6 RE5 RE4 RE3 RE2 RE1 RE0
RC4 RC5 RC6 RC7 DR0 DR1 DVDD DVSS IOVSS IOVDD RD2 RD3 RD4 RD5 RD6 RD7
RL31 10K
RL30 10K
RL29 10K
RL28 10K
RL80 33
RL81 33
RL27 10K
RL26 10K
RL25 10K
CL08 0.1
CL36 330p-C
CL35 330p-C
CL07 22/6.3 CEMC
RL24 10K
RL23 10K
RL22 10K
TXD- TX- TX+ TXD+
RL21 150
RL20 22
RL19 22
RL18 150
RL17 10K
DL03 SML-210DT COL
DL02 SML-210DT ACT
DL01 SML-210MT LNK
RL16 330
RL15 330
RL14 330
CL05 0.1
CL04 22/6.3 CEMC
CL06 22/6.3 CEMC
RL09 10K
RL10 10K
RL11 10K
RL12 10K
RL13 10K
RL66 330
DL05 SML-210MT
RXDNIC
TXDNIC
+5VST
RL57 0
RL58 0
RL59 0
LL03 NFM60R 3216
CL21 22/6.3 CEMC
CL22 0.1
CL23 330p-C
IL02 74LVC04
RL68 10
RL69 0
RL46 0
RL52 51-1%
RL53 220
RL47 0
RL51 220
RL70 10
RL71 0
RL49 0
RL48 0
RL50 51-1%
IL05 AT45DB041
SI SCK RESET CS SO GND VCC WP
RL73 33
CL45 0.1/16-F
RL74 10K
RL75 0
HL01 EPA2013DG
CL43 0.01-F
CL44 0.01-F
RL65 75-1%
RL64 75-1%
RL62 75-1%
RL63 75-1%
CL31 1000P 2KV 4520
CL32 2KV 1000P 4520
EL02 TM11R-5M2-88-LP
TX+ TX- RX+ NC NC RX- NC NC
APL01 APL02 APL03 APL04 APL05 APL06 APL07
confidential

PWB assembly DRIVE 15 (P5XLA/P5XMLA)

IP03
SI-3033KM

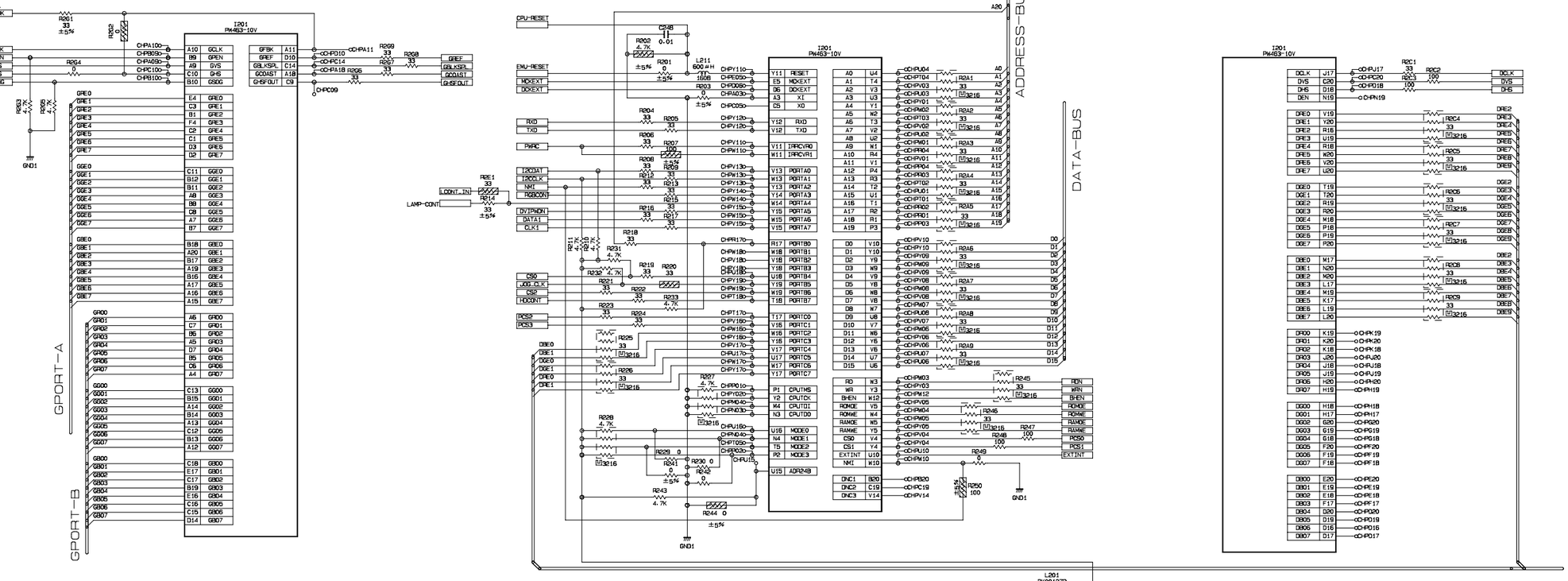
IP04
SI-3035KM

IP01
PW1231

IP02
64M SDRAM

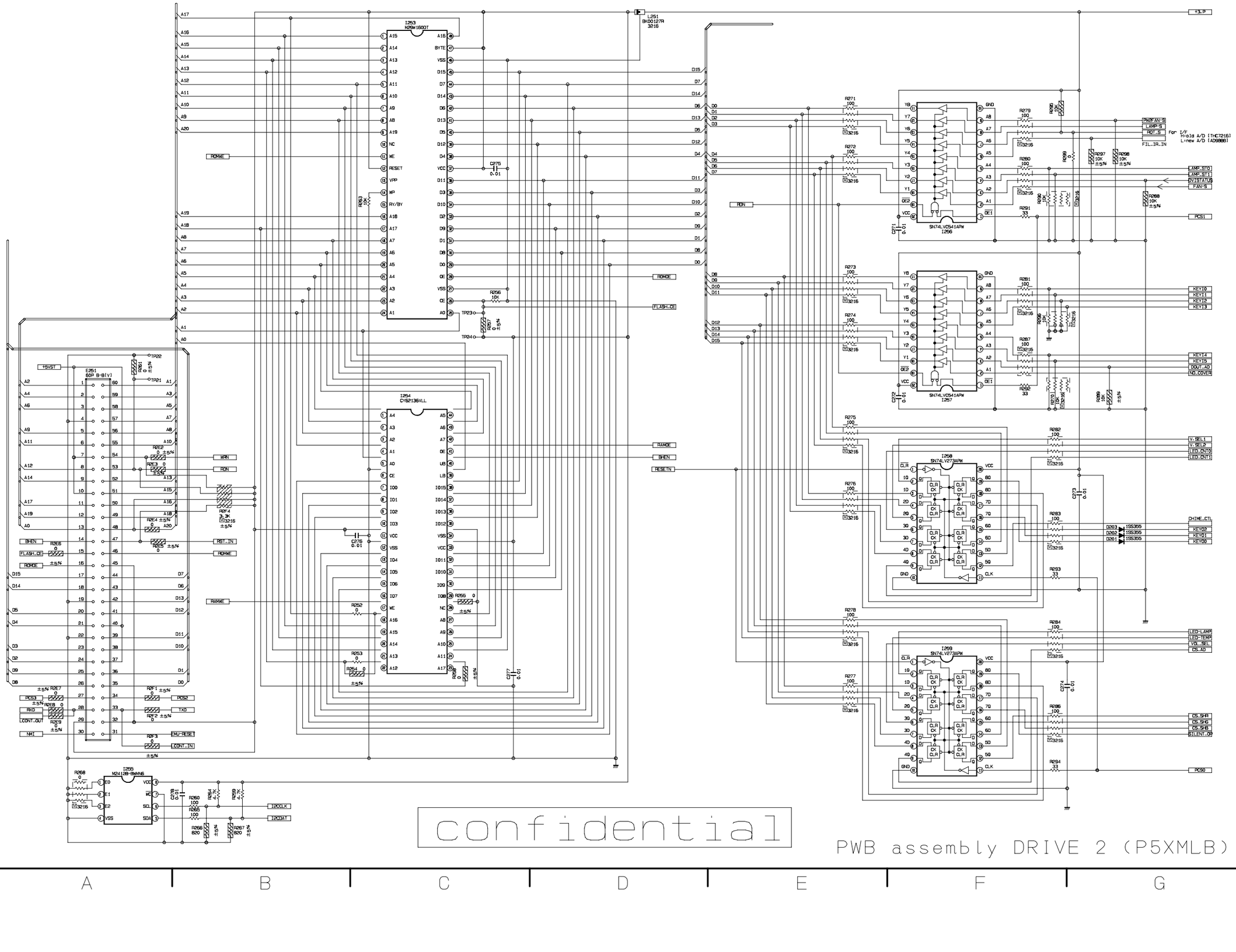
confidential

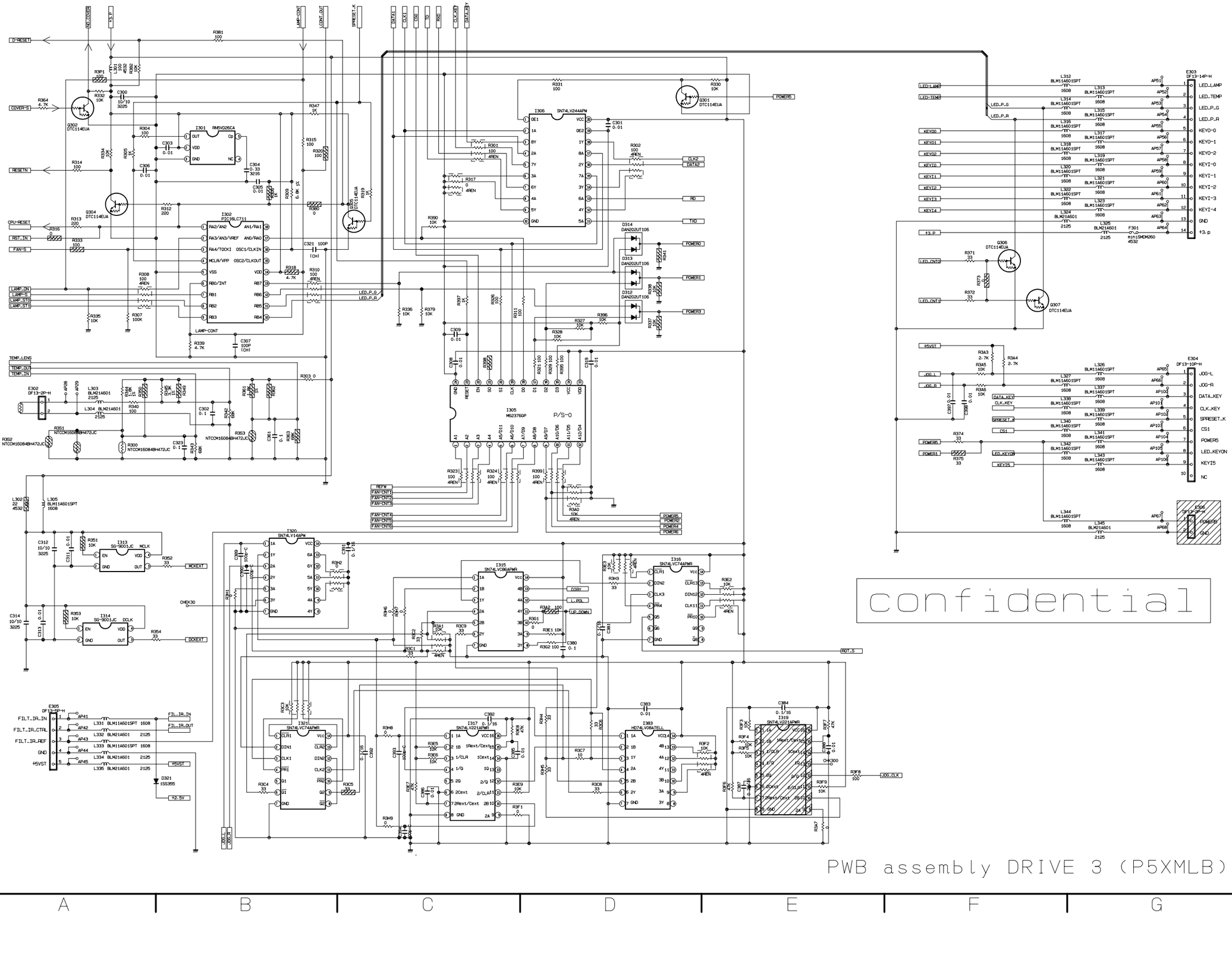
PWB assembly DRIVE 16 (P5XLA/P5XMLA)

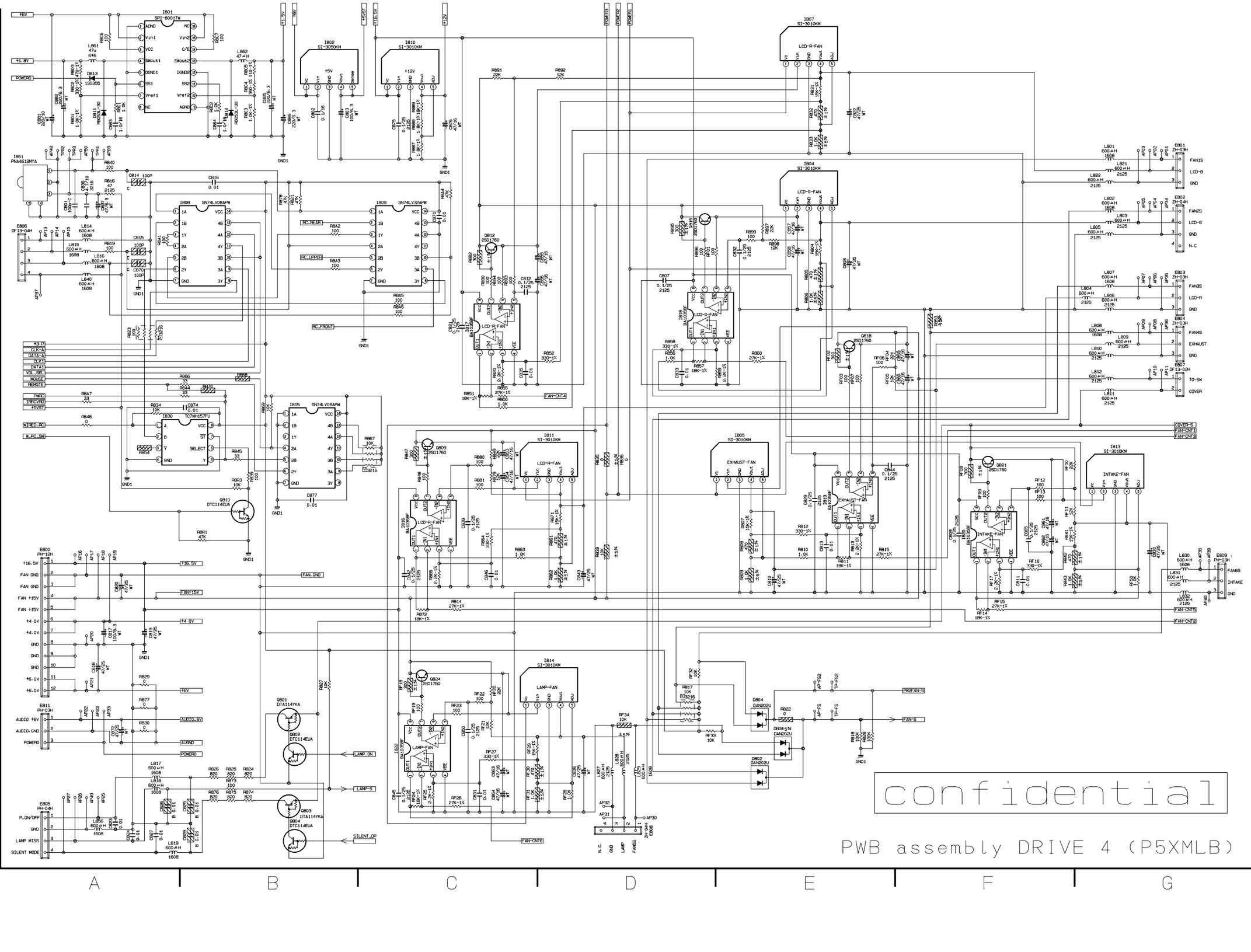


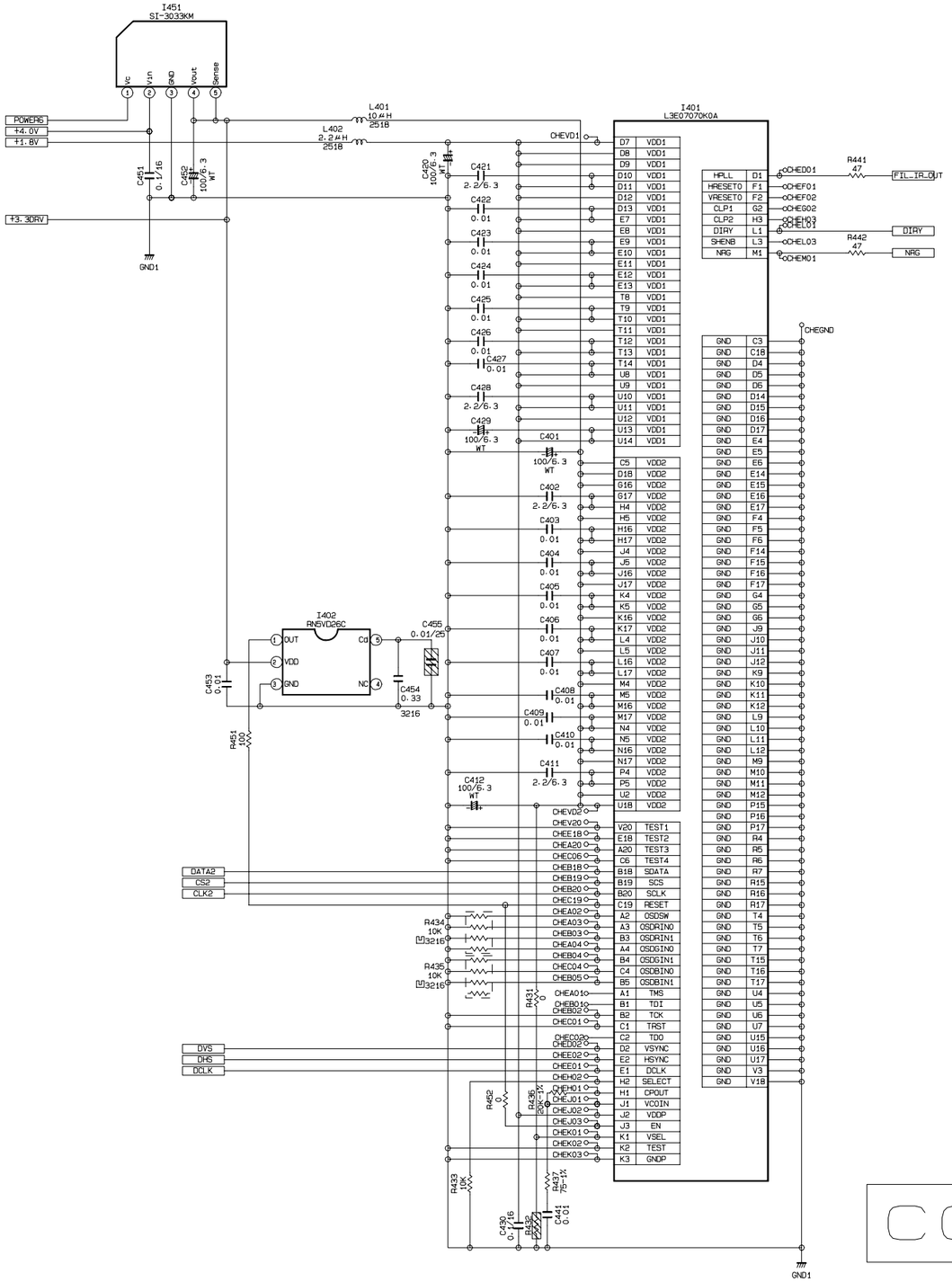
confidential

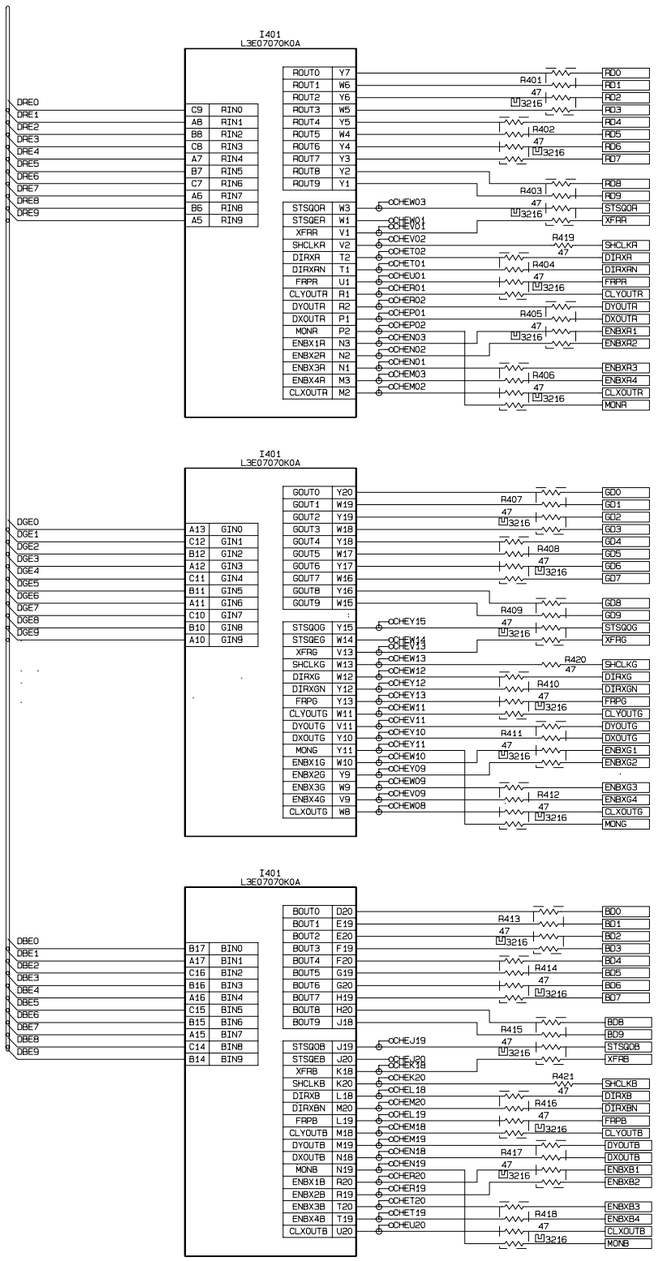
PWB assembly DRIVE 1 (P5XMLB)


I263
M29W160DT
I264
CY62136VLL
I255
M24128-BWMN6
I256
SN74LVC541APW
I257
SN74LVC541APW
I258
SN74LV273APW
I259
SN74LV273APW
E251
60P B-BIV1
L251
BK0D127R
3216
ROMWE
RAMWE
ROMOE
RAMOE
BHEN
RESETN
FLASH_CE
RON
WRN
RST_IN
TXD
RXD
PCS2
PCS3
CONT_OUT
NMI
CMU_RESET
CONT_IN
I2CCLK
I2CDAT
PWDFAN-S
LAMP-S
ROT-S
FIL_IR_IN
For I/F
Hiola A/D (THC7216)
Lnew A/D (AD9888)
AMP_ST0
AMP_ST1
DVISTATUS
FAN-S
PCS1
KEYI0
KEYI1
KEYI2
KEYI3
KEYI4
KEYI5
DOUT_AD
NO_COVER
V_SEL1
V_SEL2
LED_CNT0
LED_CNT1
CHIME_CTL
KEYO3
KEYO1
KEYO0
LED_LAMP
LED_TEMP
VOL_SEL
CS_AD
CS_SHR
CS_SHG
CS_SHB
BTCENT_OP
PCS0
+3.3V
+5VST
confidential
PWB assembly DRIVE 2 (P5XMLB)


D-RESET
RESETN
COVER-S
CPU-RESET
RST_IN
FAN-S
LAMP_ON
LAMP-S
LAMP_STS
LAMP_ST1
LAMP-CONT
TEMP_LENS
TEMP_OUT
TEMP_IN
LED-P_G
LED-P_R
POWER5
CLK2
DATA2
RO
TXD
POWER0
POWER1
POWER3
REFM
FAN-CNT1
FAN-CNT2
FAN-CNT3
FAN-CNT4
FAN-CNT5
FAN-CNT6
POWER5
POWER0
POWER1
POWER3
LED-LAMP
LED-TEMP
KEY00
KEY01
KEY02
KEY10
KEY11
KEY12
KEY13
KEY14
+3.P
LED_CNT0
LED_CNT1
+5VST
JOG-L
JOG-R
DATA_KEY
CLK_KEY
SPRESET_K
CS1
POWER5
POWER1
LED_KEYON
KEYI5
JOG_CLK
CHK300
CHEK30
MDREXT
DDREXT
DIRV
L_POL
LP_DOWN
ROT_S
FILT_IR_IN
FILT_IR_CTRL
FILT_IR_REF
GND
+5VST
+2.5V
FIL_IR_IN
FIL_IR_OUT
JOG_L
JOG_R
I305 M62376GP P/S-0
I306 SN74LV244APW
I320 SN74LV144APW
I315 SN74LVC08APWR
I316 SN74LVC74APWR
I317 SN74LV221APWR
I319 SN74LV221APWR
I301 RN5VD26CA
I302 PIC16LC711
I313 SG-9001JC MCLK
I314 SG-9001JC DCLK
I303 I304 I307 I308 I309 I310 I311 I312 I318
Q301 DTC114EUA
Q302 DTC114EUA
Q304 DTC114EUA
Q305 DTC114EUA
Q306 DTC114EUA
Q307 DTC114EUA
D314 DAN202UT106
D313 DAN202UT106
D312 DAN202UT106
D321 1SS355
E303 DF13-14P-H
E304 DF13-10P-H
E305 DF13-5P-H
E306 DF13-3P-H
F301 numl5MDM260
confidential
PWB assembly DRIVE 3 (P5XMLB)

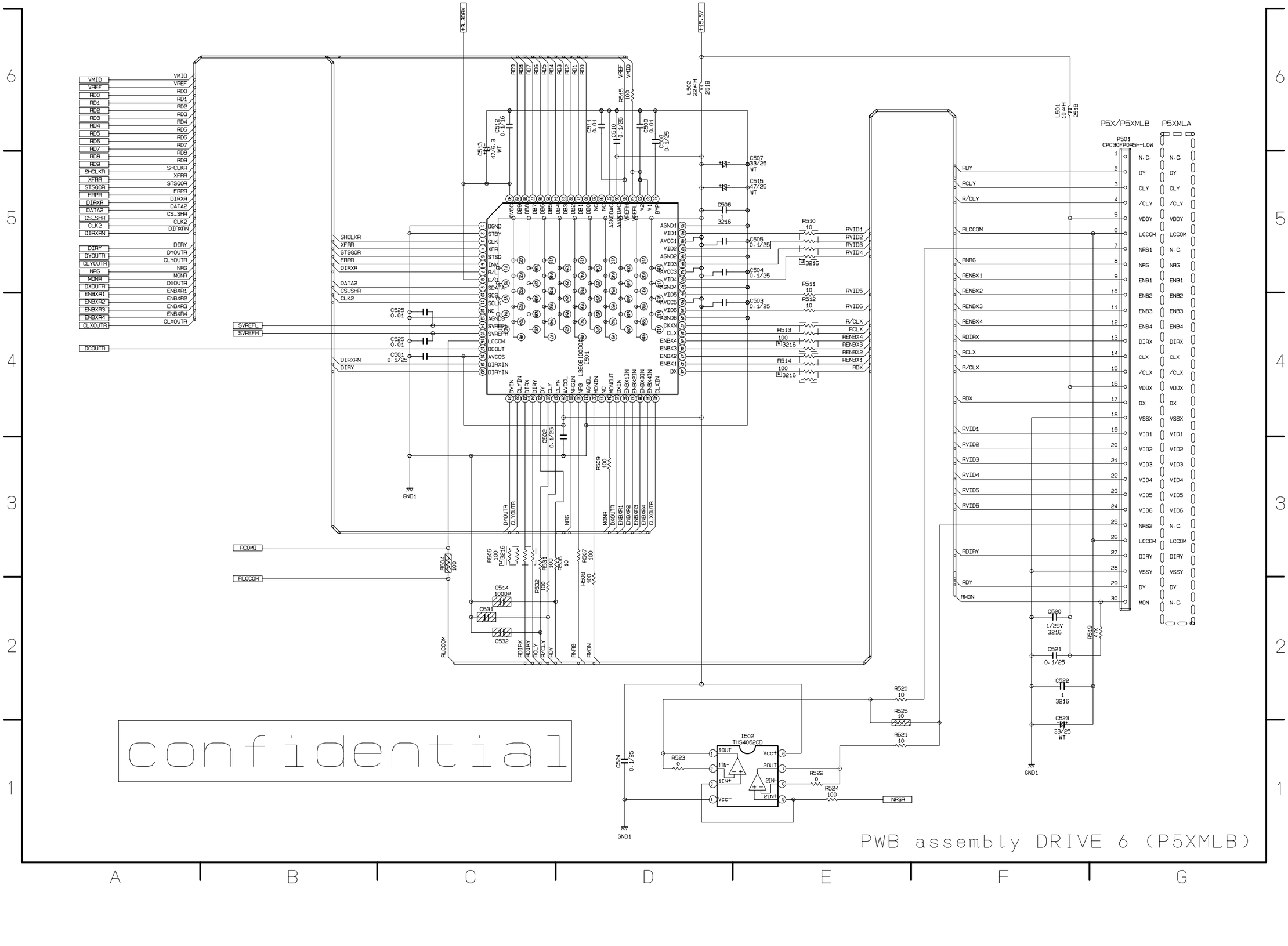

confidential
PWB assembly DRIVE 4 (P5XMLB)
IB01 SPI-B001TW
IB02 SI-3050KM
IB10 SI-3010KM
IB07 SI-3010KM
IB04 SI-3010KM
IB11 SI-3010KM
IB05 EXHAUST-FAN
IB13 SI-3010KM
INTAKE-FAN
IB14 SI-3010KM
LAMP-FAN
IB08 SN74LV08APW
IB09 SN74LV32APW
IB15 SN74LV08APW
IB30 TC7WH157FU
LCD-R-FAN
LCD-G-FAN
EXHAUST-FAN
INTAKE-FAN
LAMP-FAN
+6V
+1.8V
POWER5
+1.5V
+5VST
+15.5V
+12V
POWER3
POWER2
POWER1
GND1
RC_REAR
RC_UPPER
RC_FRONT
FAN-CNT4
FAN-CNT6
FAN-CNT5
FAN-CNT1
FAN-CNT3
FAN-CNT2
COVER-S
PROFAN-S
FAN-S
LAMP_ON
LAMP_S
SILENT_OP
FAN_GND
FAN15V
+16.5V
+4.0V
AUDIO+6V
AUDIO.6V
AUDIO.GND
AUGND
POWER0
CLK-A
DATA-A
CLK1
DATA1
VOL_CONT
MOUSE
REMOTE
PWRC
IRRCVR0
+5VST
WIRED_RC
W_RC_SW
P_ON/OFF
LAMP MISS
SILENT MODE
FAN1S
LCD-B
GND
FAN2S
LCD-G
N.C
FAN3S
LCD-R
FAN4S
EXHAUST
TO-SW
COVER
FANBS
INTAKE

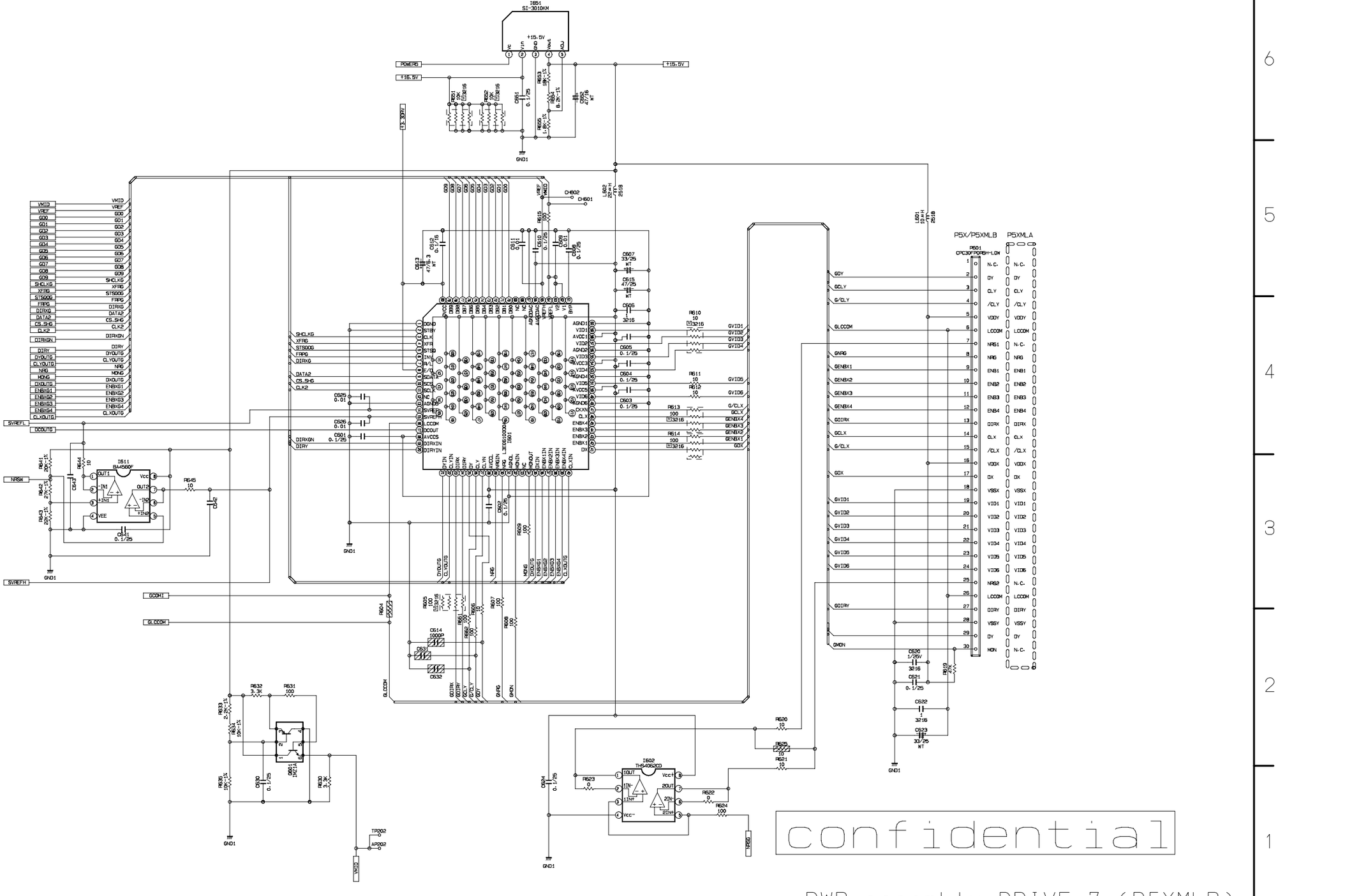


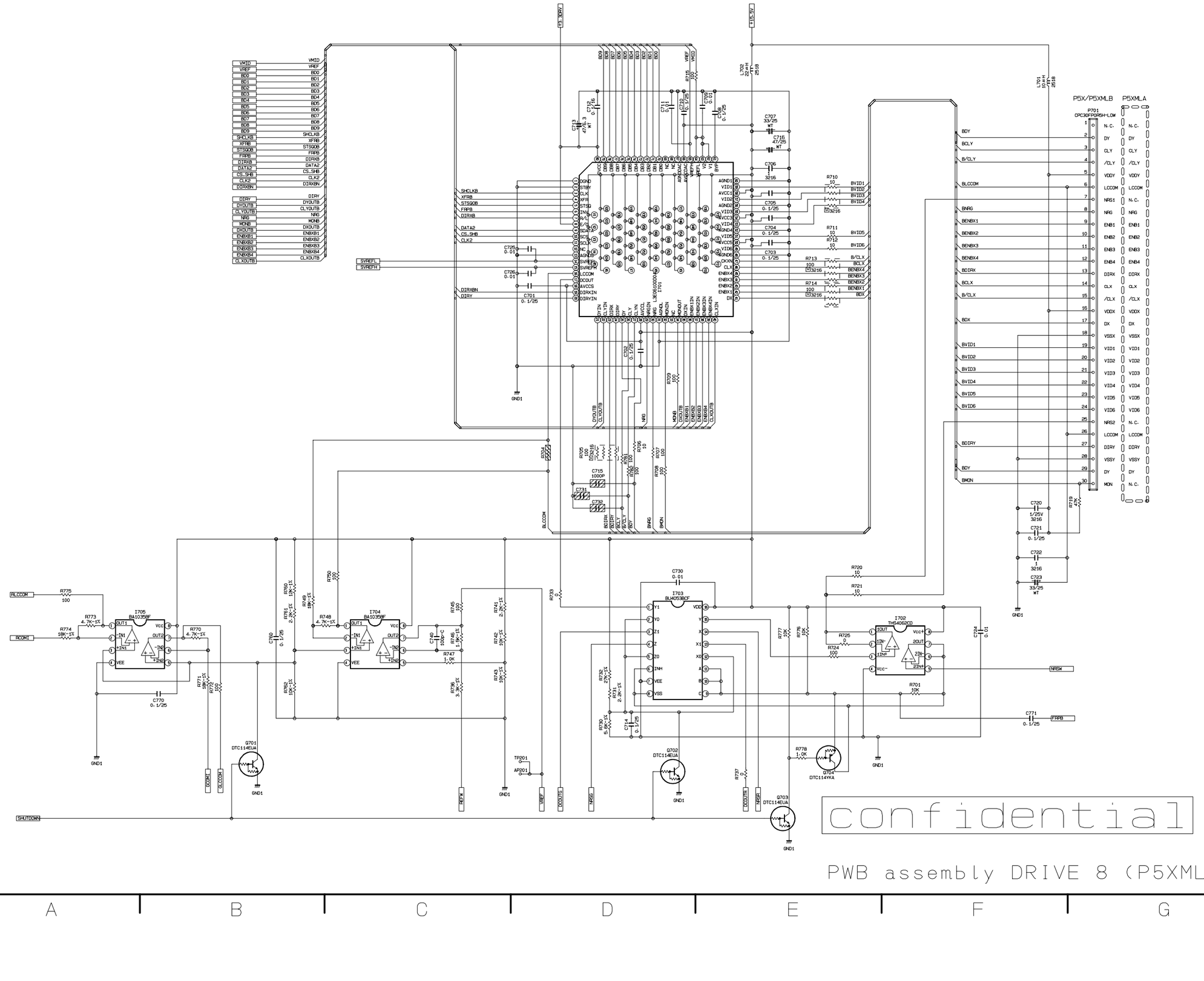


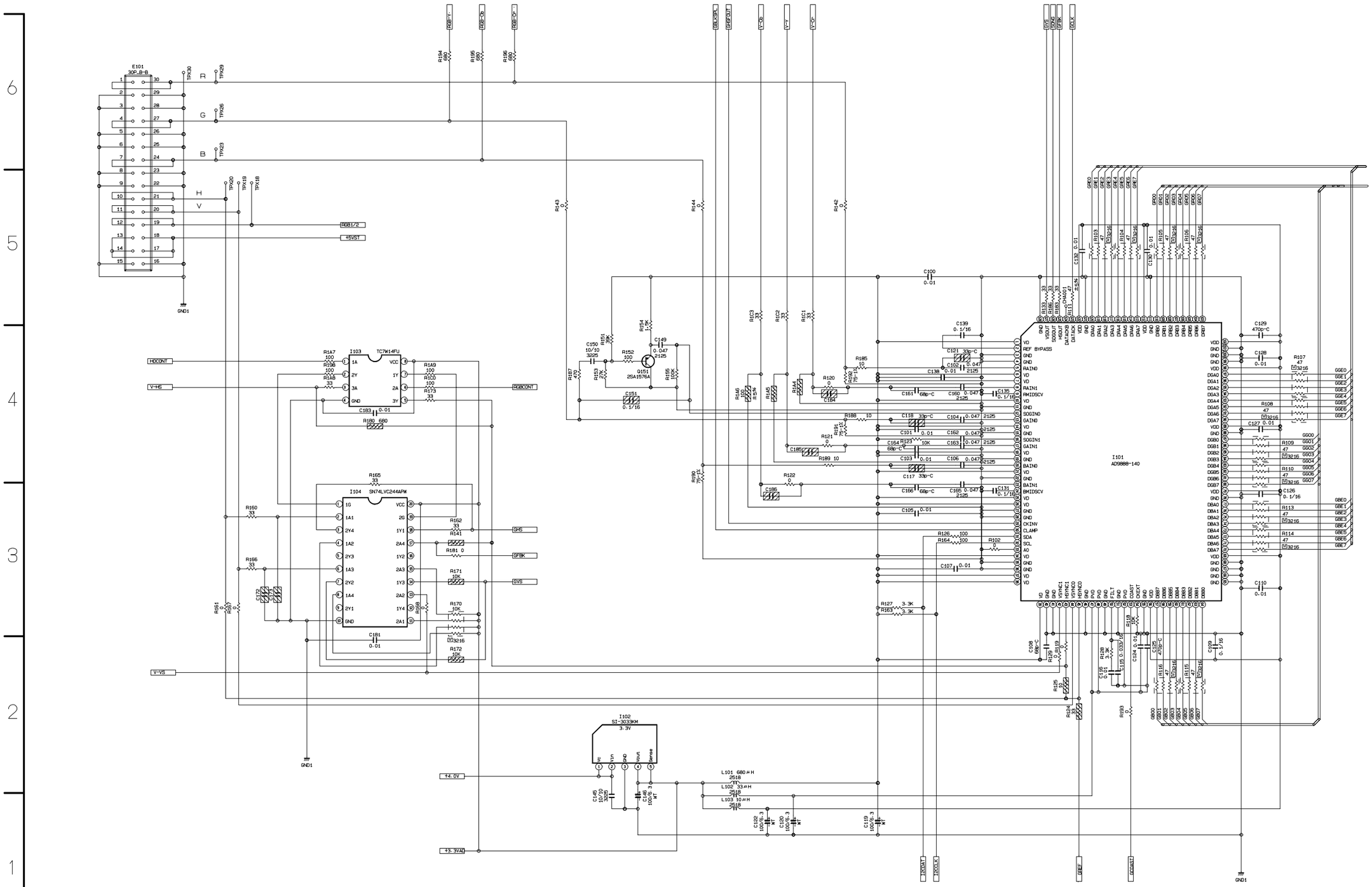
confidential

PWB assembly DRIVE 5 (P5XMLB)


+3.3DRV
+15.5V
VMID
VREF
RD0
RD1
RD2
RD3
RD4
RD5
RD6
RD7
RD8
RD9
SHCLKR
XFRR
STSQ0R
FRPR
DIRXR
DATA2
CS_SHR
CLK2
DIRXRN
DIRY
DYOUTR
CLYOUTR
NRG
MONR
DXOUTR
ENBXR1
ENBXR2
ENBXR3
ENBXR4
CLXOUTR
DCOUTR
SVREFL
SVREFH
I501
L3E0S10ODDA
L502
22uH
10%
2518
L501
10uH
10%
2518
C502
0.1/25
C503
33/25
WT
C504
0.1/25
C505
0.1/25
C506
3216
C507
33/25
WT
C509
0.01
C510
0.1/25
C511
0.01
C512
0.1/16
C513
47/6.3
WT
C514
1000P
C515
47/25
WT
C521
0.1/25
C522
1
3216
C524
0.1/25
C525
0.01
C526
0.01
C531
C532
R509
100
R510
10
R511
10
R512
10
R513
100
3216
R514
100
3216
R515
100
R519
47K
R520
10
R521
10
R522
0
R523
0
R524
100
R525
10
R532
100
I502
THS4062CD
10UT
1IN-
1IN+
Vcc-
Vcc+
2OUT
2IN-
2IN+
GND1
RCOMI
RLCCOM
NRSR
P5X/P5XMLB
P5XMLA
P501
CPC30FPOR5H-LOW
N.C.
DY
CLY
/CLY
VDDY
LCCOM
NRS1
NRG
ENB1
ENB2
ENB3
ENB4
DIRX
CLX
/CLX
VDDX
DX
VSSX
VID1
VID2
VID3
VID4
VID5
VID6
NRS2
DIRY
VSSY
MON
RDY
RCLY
R/CLY
RLCCOM
RNRG
RENBX1
RENBX2
RENBX3
RENBX4
RDIRX
RCLX
R/CLX
RDX
RVID1
RVID2
RVID3
RVID4
RVID5
RVID6
RDIRY
RMON
confidential
PWB assembly DRIVE 6 (P5XMLB)


I651
SI-3010KM
+15.5V
POWER6
+16.5V
+15.5V
+3.3DRV
GND1
P5X/P5XML_B
P5XML_A
P501
CPC30FPDR6H-LDM
I611
BA4560F
I602
THS4052CD
I601
LB08L0000A
confidential
PWB assembly DRIVE 7 (P5XMLB)


P5X/P5XMLB
P5XMLA
P701
CPC30FPGRSH-LOW
VMID
VREF
BD0
BD1
BD2
BD3
BD4
BD5
BD6
BD7
BD8
BD9
SHCLKB
XFRB
STSGOB
FRPB
DIRXB
DATA2
CS_SHB
CLK2
DIRXBN
DIRY
DYOUTB
CLYOUTB
NRG
MONB
DXOUTB
ENBXB1
ENBXB2
ENBXB3
ENBXB4
CLXOUTB
I705
BA10358F
I704
BA10358F
I703
BU4053BCF
I702
THS4062CD
I701
BL3051000A-J101
Q701
DTC114EUA
Q702
DTC114EUA
Q703
DTC114EUA
Q704
DTC114YKA
GND1
TP201
AP201
SVREFL
SVREFH
SHUTDOWN
NRSW
FRPB
confidential
PWB assembly DRIVE 8 (P5XMLB)



confidential

PWB assembly DRIVE 9 (P5XMLB)

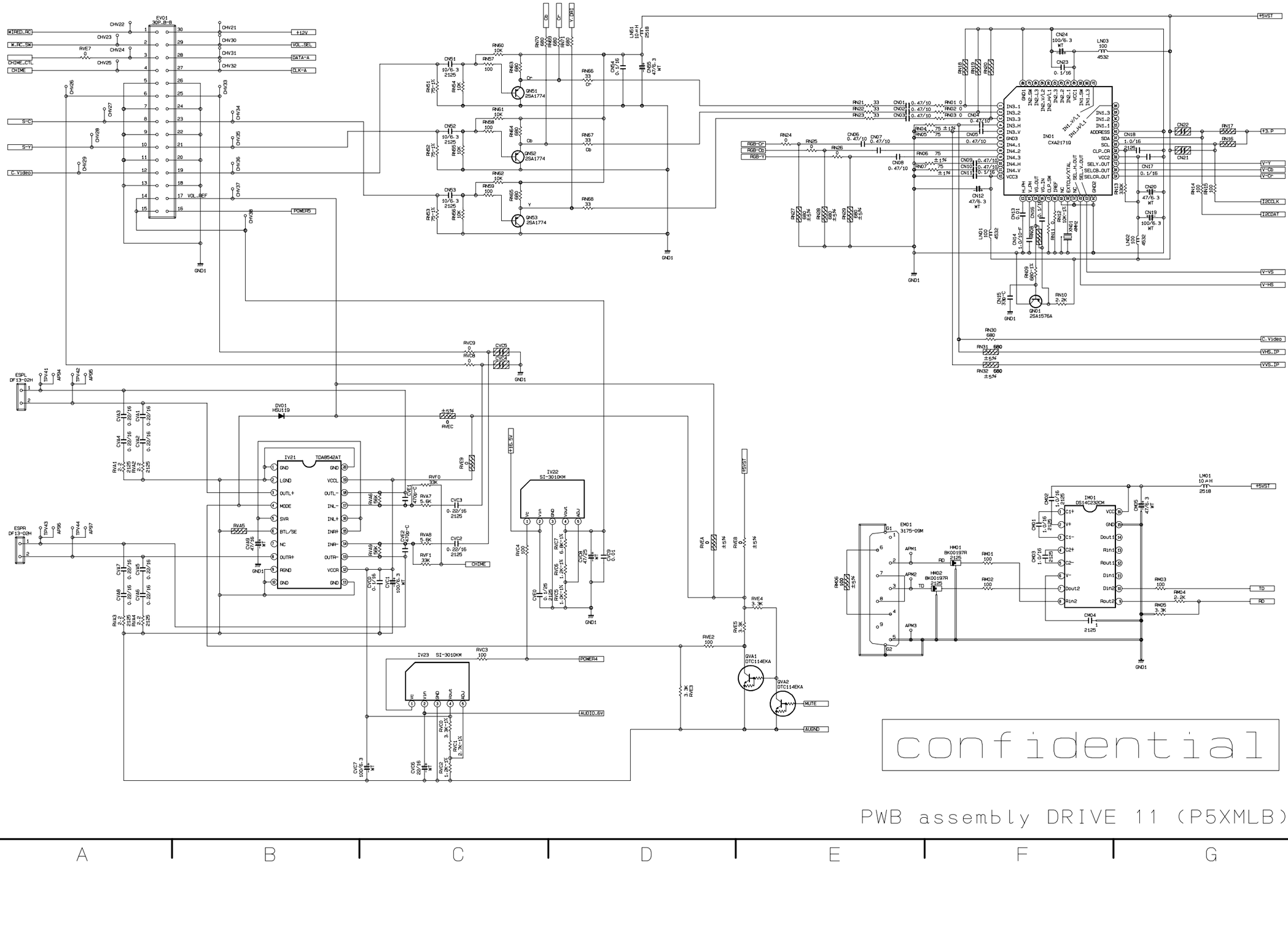
1	2	ASPECT
L	L	16 : 9
L	H	LETTER
H	H	4 : 3

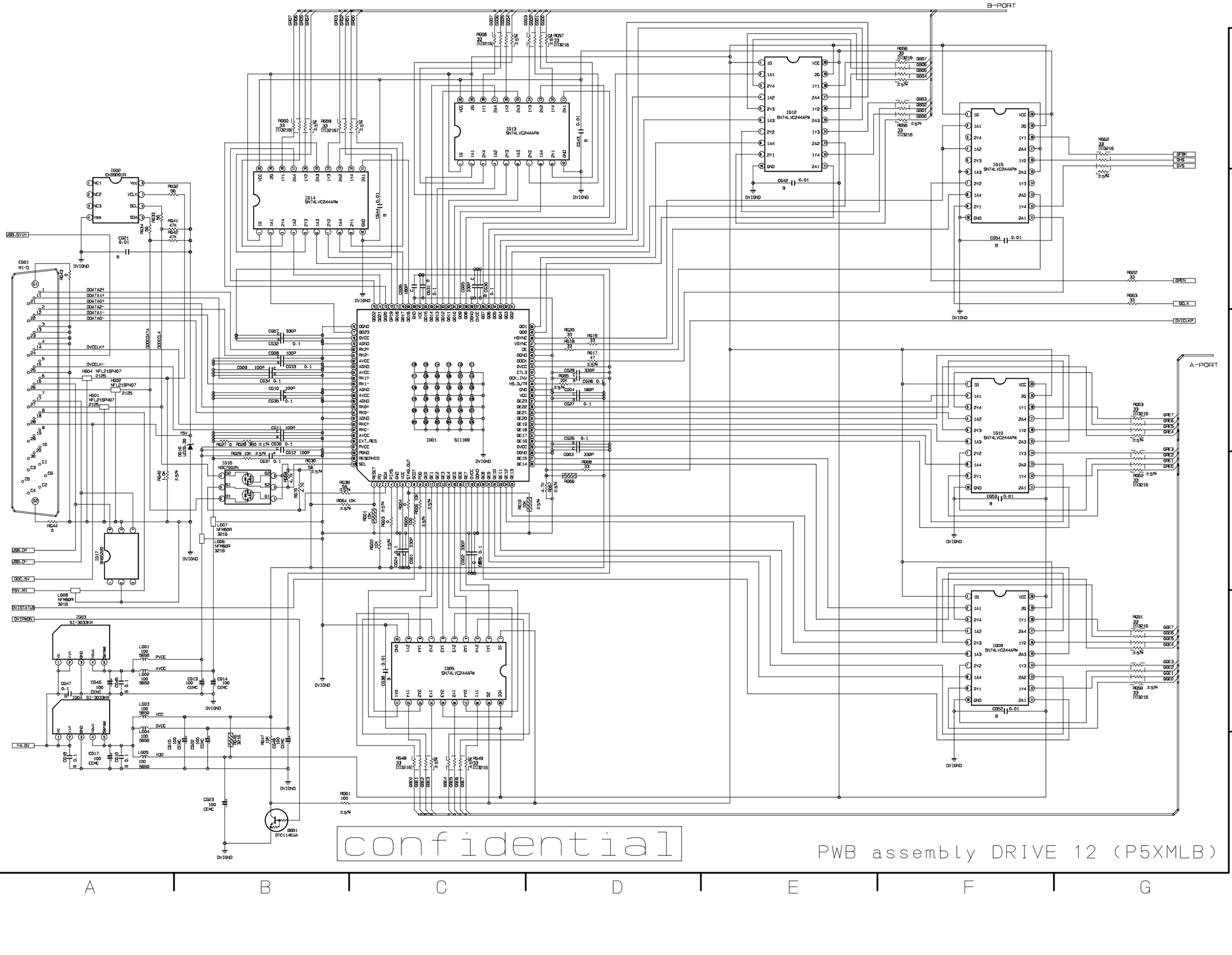
1	2	SELECT
L	L	S-VIDEO
H	L	CVBS
-	H	COMPONENT

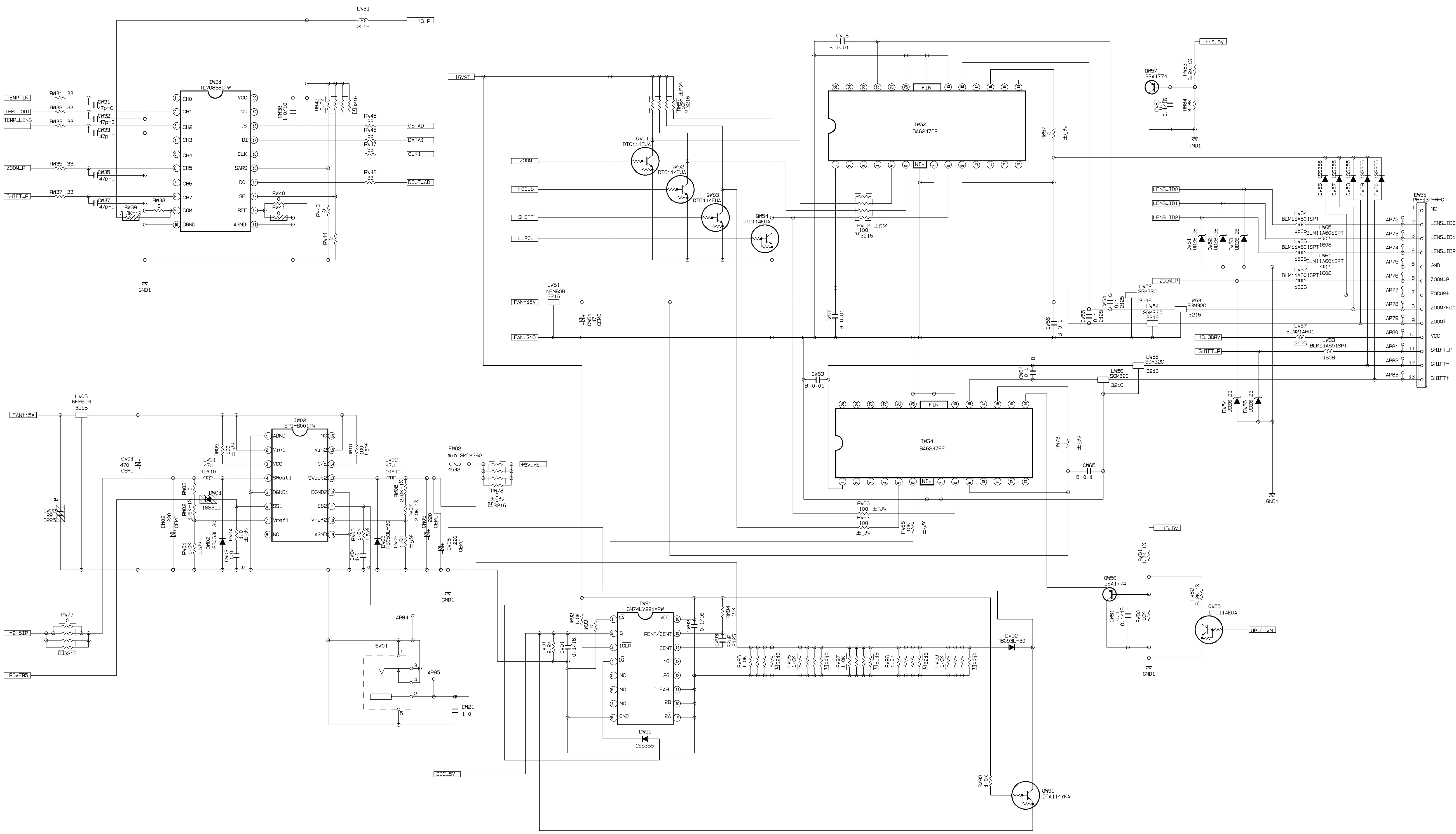
S-ASP1
S-ASP0
V.SEL2
V.SEL1
+5VST
+12.5V
+3.3VAD
+1.8V
S-CIN
S-YIN
C.VIDEO
Y.DR1
Cb
Cr
S.CIN
SEP.C
Y.SW3
Y
PW V-Port
I/P Input Port
DHKV79
DHKV78
DHKV61
DHKV60
DHKV57
DHKV56
VFIELD
VVS
VVS_TP
VHS
VHS_TP
VUV7
VUV6
VUV5
VUV4
VUV3
VUV2
VUV1
VUV0
VR7
VR6
VR5
VR4
VR3
VR2
VR1
VR0
VY0
VY1
VY2
VY3
VY4
VY5
VY6
VY7
VG0
VG1
VG2
VG3
VG4
VG5
VG6
VG7
VCLK
VCLK_TP
COUT[0:1],YOUT[0:1]
NO NEED TO CONNECT
RESETN
I2CDAT
I2CCLK
Analog
Digital
DRAM
I/O
XO
IV01
CX39002U
GND1

confidential

PWB assembly DRIVE 10 (P5XMLB)


EV01 30P_B-B
WIRELESS
W_RC_SW
CHIME_CTL
CHIME
S-C
S-Y
C.Video
VOL_REF
POWER5
±12V
VOL_SEL
DATA-A
CLK-A
GND1
RN51 RN52 RN53 10K
RN54 RN55 RN56 75
RN57 RN58 RN59 100
RN60 RN61 RN62 10K
RN63 RN64 RN65 680
RN66 RN67 RN68 33
Cr
Cb
Y
QN51 QN52 QN53 2SA1774
CN51 CN52 CN53 10/6.3 2125
CN54 0.47/16
CN55 47/6.3 MT
LN51 10uH 10% 2518
RN70 680
RN69 680
RN71 680
RN72 680
+5VST
RN21 RN22 RN23 33
CN01 CN02 CN03 0.47/10
RN01 RN02 RN03 0
CN04 0.47/10
RN04 RN05 75 ±1%
CN05 0.47/10
RN06 RN07 75 ±1%
CN09 CN10 CN11 0.47/10 0.47/10 0.1/16
CN08 0.47/10
CN12 47/6.3 MT
RGB-Cr
RGB-Cb
RGB-Y
RN24 0
RN25 0
RN26 0
CN06 0.47/10
CN07 0.47/10
RN27 RN28 RN29 680 ±5%
IN01 CXA2171Q
CN24 100/6.3 MT
LN03 100 TY 4532
CN23 0.1/16
RN16 RN17 RN18
CN22 CN21
CN18 1.0/16 2125
CN17 0.1/16
CN20 47/6.3 MT
CN19 100/6.3 MT
RN13 33K
RN14 RN15 100
LN01 100 TY 4532
LN02 100 TY 4532
CN13 0.1/16
CN14 1.0/16-F
RN08 6
RN11 0
RN12 10K-1%
XN01 4MHz
RN09 680-1%
CN15 33PF
RN10 2.2K
QN01 2SA1576A
RN30 680
RN31 680 ±5%
RN32 680 ±5%
T+
T-
T-P
T+P
V-Y
V-Cb
V-Cr
I2CCLK
I2CDAT
V-VS
V-HS
C.Video
VHS_IP
VVS_IP
ESPL DF13-02H
TPV41 TPV42
AP94 AP95
CV03 CV04 CV01 CV02 0.22/16 2125
RVC9 RVC8 CVC9 CVC4
DV01 HSU119
±5% RVEC
IV21 TDA8542AT
GND LGND OUTL+ MODE SVR BTL/SE NC OUTR+ RGND GND
VCCL OUTL- INL- INL+ INR+ INR- OUTR- VCCR GND
RVA1 RVA2 RVA3 RVA4 2.2 2125
CV17 CV18 CV15 CV16 0.22/16 2125
RVA5 RVA6 RVA7 RVA8 RVA9 RVA0 5.6K
CVA8 47/6.3 MT
CVA6 0.1/16
CVA7 100/6.3 MT
CVE1 470P-C
CVC6 470P-C
RVF0 33K
RVF1 33K
CVC3 CVC2 0.22/16 2125
CHIME
RVF3
IV22 SI-3010KM
Vc Vin GND Vout ADJ
+15.5V
CVC4 100
CVC0 0.1/25 2125
RVC5 RVC4 1.8K-1% 1.8K-1%
CVC8 47/25
CVC9 0.1
RVE4 3.3K
RVE5 3.3K
RVE2 100
RVE1 RVE3 ±5%
IV23 SI-3010KM
RVC3 100
POWER4
AUDIO_6V
RVC0 RVC1 3.3K-1% 2.2K-1%
RVC2 1.8K-1%
CVC7 100/6.3 MT
CVC5 22/16 MT
3.3K 2125
QVA1 DTC114EKA
QVA2 DTC114EKA
MUTE
AUGND
EM01 3175-09M
APM1 APM2 APM3
HM01 BK00197R 2125
HM02 BK00197R 2125
RM01 RM02 100
RM03 RM04 100
RM05 3.3K
RM06 100 ±5%
TD
RD
IM01 DS14C232CM
C1+ V+ C1- C2+ C2- V- Dout2 Rin2
VCC GND Dout1 Rin1 Rout1 Din1 Din2 Rout2
CM02 CM01 CM03 1.0/16 2125
CM05 47/6.3 MT
CM04 1 2125
LM01 10uH TY 2518
confidential
PWB assembly DRIVE 11 (P5XMLB)


B-PORT
A-PORT
IG02 CY2009JA
IG01 SII169
IG03 SI-3033KM
IG04 SI-3033KM
IG05 SN74LVC244APW
IG06 SN74LVC244APW
IG07 SN74LVC244APW
IG08 SN74LVC244APW
IG09 SN74LVC244APW
IG10 SN74LVC244APW
IG11 SN74LVC244APW
IG12 SN74LVC244APW
IG13 SN74LVC244APW
IG14 SN74LVC244APW
IG15 SN74LVC244APW
IG16 NDC7002N
IG17 SN65220
DVIGND
+5V
+4.0V
USB_5V1n
USB_D1
USB_D-
DDC_5V
+5V_M1
DV1STATUS
DV1PWON
DDATA2+
DDATA1+
DDATA0+
DDATA2-
DDATA1-
DDATA0-
DVCCLK+
DVCCLK-
DDCDATA
DDCCLK
GFBK
GHS
GVS
GPEN
GCLK
DVICLKP
confidential
PWB assembly DRIVE 12 (P5XMLB)



IW31
TLV0838CPW
CH0
CH1
CH2
CH3
CH4
CH5
CH6
CH7
COM
DGND
VCC
NC
CS
DI
CLK
SARS
DO
SE
REF
AGND
TEMP_IN
TEMP_OUT
TEMP_LENS
ZOOM_P
SHIFT_P
CS_AD
DATA1
CLK1
DOUT_AD
+3.P
LW31
2518
GND1
+5VST
ZOOM
FOCUS
SHIFT
L.POL
QW51
DTC114EUA
QW52
DTC114EUA
QW53
DTC114EUA
QW54
DTC114EUA
IW52
BA6247FP
IW54
BA6247FP
FIN
FAN+15V
FAN.GND
LW51
NFM60R
3216
CW51
47
CEMC
QW57
2SA1774
+15.5V
LENS_ID0
LENS_ID1
LENS_ID2
+3.3DRV
EW51
PH-13P-H-C
NC
LENS_ID0
LENS_ID1
LENS_ID2
GND
ZOOM_P
FOCUS+
ZOOM/FOcus-
ZOOM+
VCC
SHIFT_P
SHIFT-
SHIFT+
IW02
SPI-8001TW
ADND
Vin1
VCC
SWout1
DGND1
SS1
Vref1
NC
Vin2
C/E
SWout2
DGND2
SS2
Vref2
AGND
LW03
NFM60R
3216
+2.5IP
POWER5
FW02
miniSMDM260
+5V_M1
EW01
AP84
AP85
DDC_5V
IW91
SN74LV221APW
1A
B
1CLR
1Q
GND
RENT/CENT
CENT
2Q
CLEAR
2B
2A
DW91
1SS355
DW92
RB053L-30
QW91
DTA114YKA
QW56
2SA1774
QW55
DTC114EUA
UP_DOWN

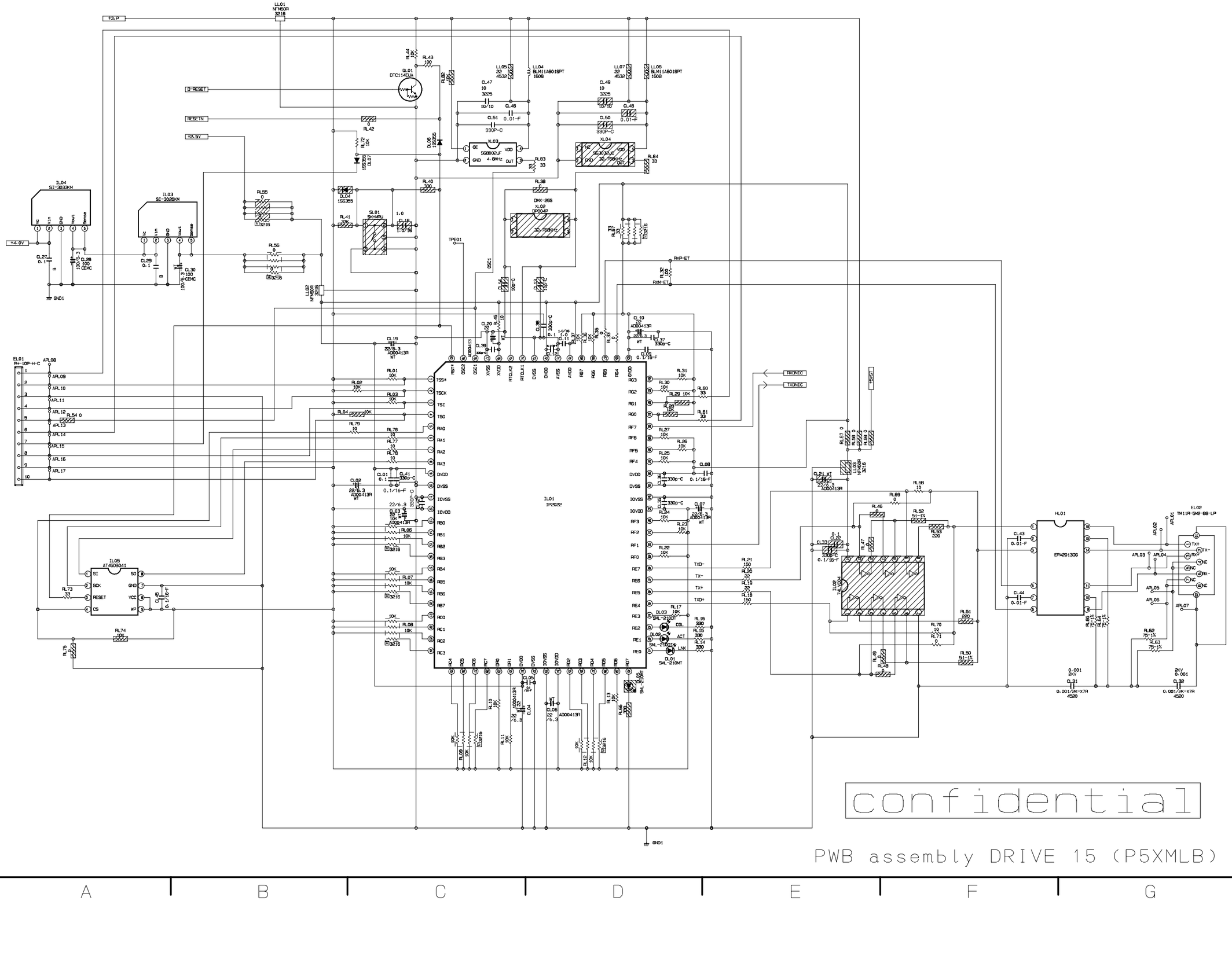
confidential

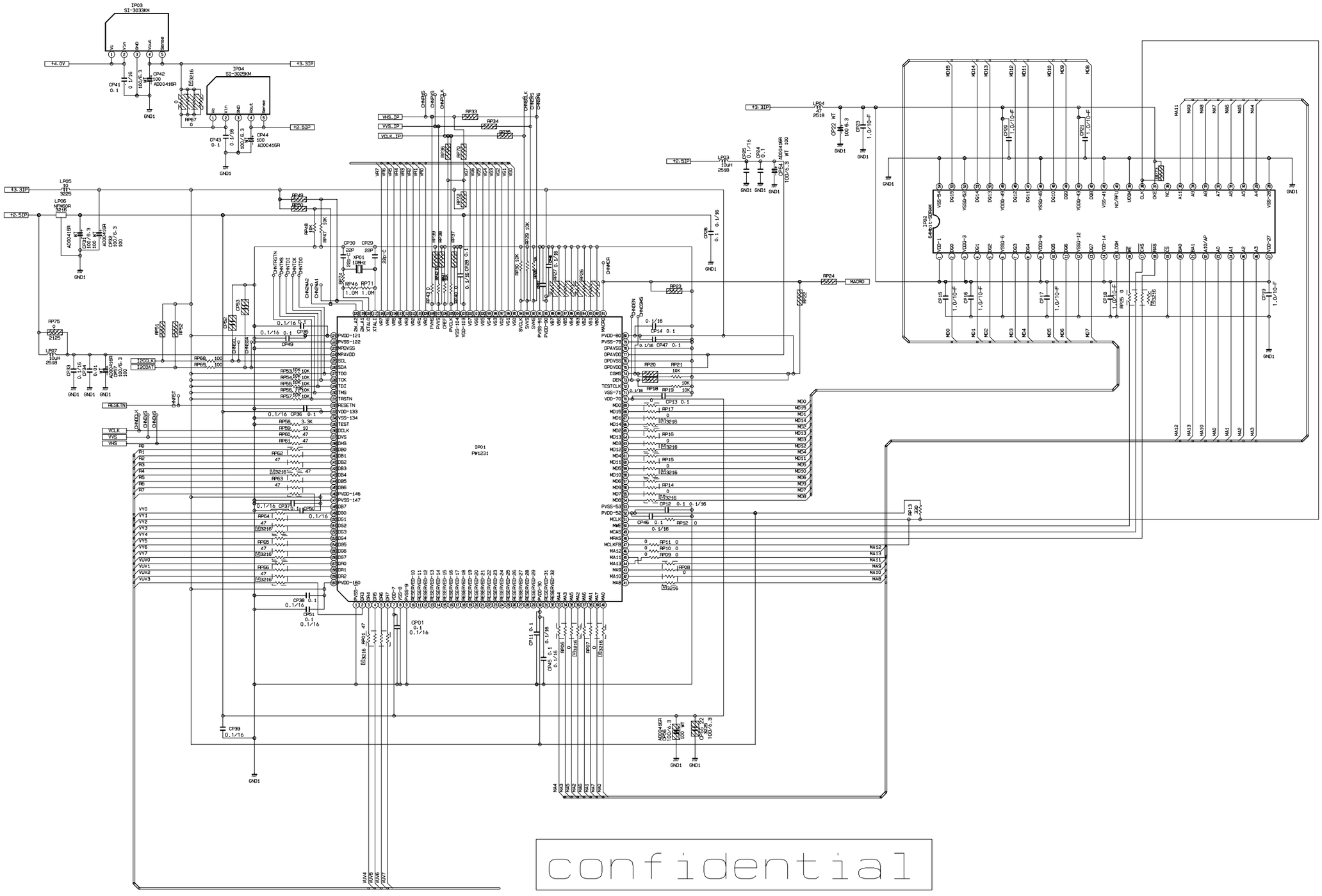
PWB assembly DRIVE 13 (P5XMLB)

ID0	ID1	
L	L	Hitachi
L	L	I/F
H	L	Proxima
L	H	ASK

confidential

PWB assembly DRIVE 14 (P5XMLB)


IL01
IP2022
IL02
IL03
IL04
IL05
EL01
EL02
HL01
DL01
DL02
DL03
DL04
DL05
DL06
DL07
XL01
XL02
XL03
XL04
LL01
LL02
LL03
LL04
LL05
LL06
LL07
SL01
TPE01
+3.3
+2.5V
+4.0V
D-RESET
RESETN
GND1
RXP-ET
RXM-ET
RXIN1C
TXIN1C
TSST
TSS*
TSCK
TSI
TSO
RST*
OSC2
OSC1
XVSS
XVDD
RTCI-X2
RTCI-X1
DVSS
DVDD
AVSS
AVDD
RB7
RB6
RB5
RB4
RA0
RA1
RA2
RA3
IOVSS
IOVDD
RB0
RB1
RB2
RB3
RC0
RC1
RC2
RC3
RG3
RG2
RG1
RG0
RF7
RF6
RF5
RF4
RF3
RF2
RF1
RF0
RE7
RE6
RE5
RE4
RE3
RE2
RE1
RE0
TXD-
TX-
TX+
TXD+
TX+
TX-
RX+
NC
NC
RX-
NC
APL01
APL02
APL03
APL04
APL05
APL06
APL07
APL08
APL09
APL10
APL11
APL12
APL13
APL14
APL15
APL16
APL17
confidential
PWB assembly DRIVE 15 (P5XMLB)



PWB assembly DRIVE 16 (P5XMLB)

RGB IN1

RGB IN2

RGB OUT

L:RGB1/H:RGB2

R1/R2

RGB.H-INV

RGB.V-INV

+4V

-4V

H

V

R1

R2

G2

B1

G1

B2

R

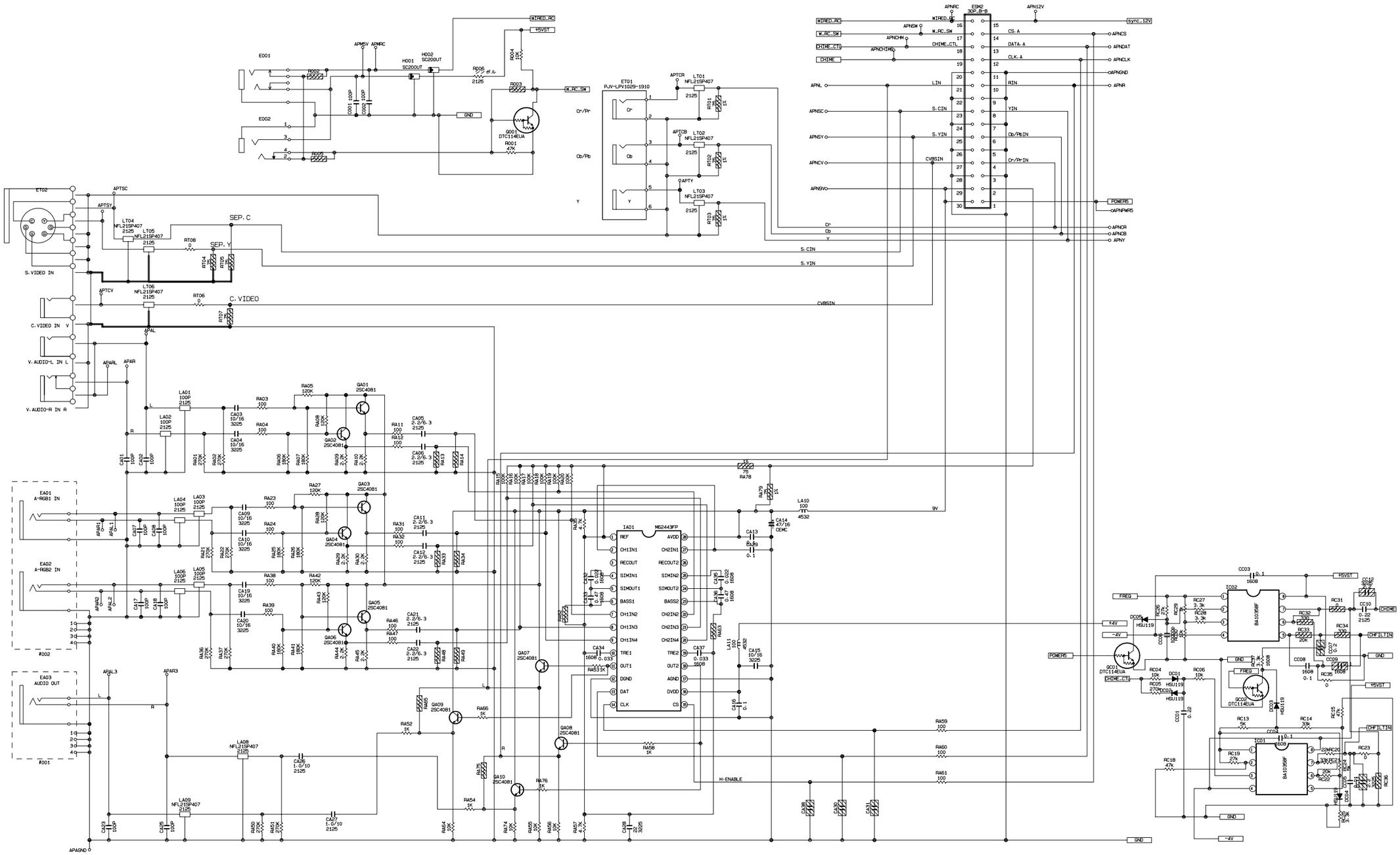
G

B

H5VST

confidential

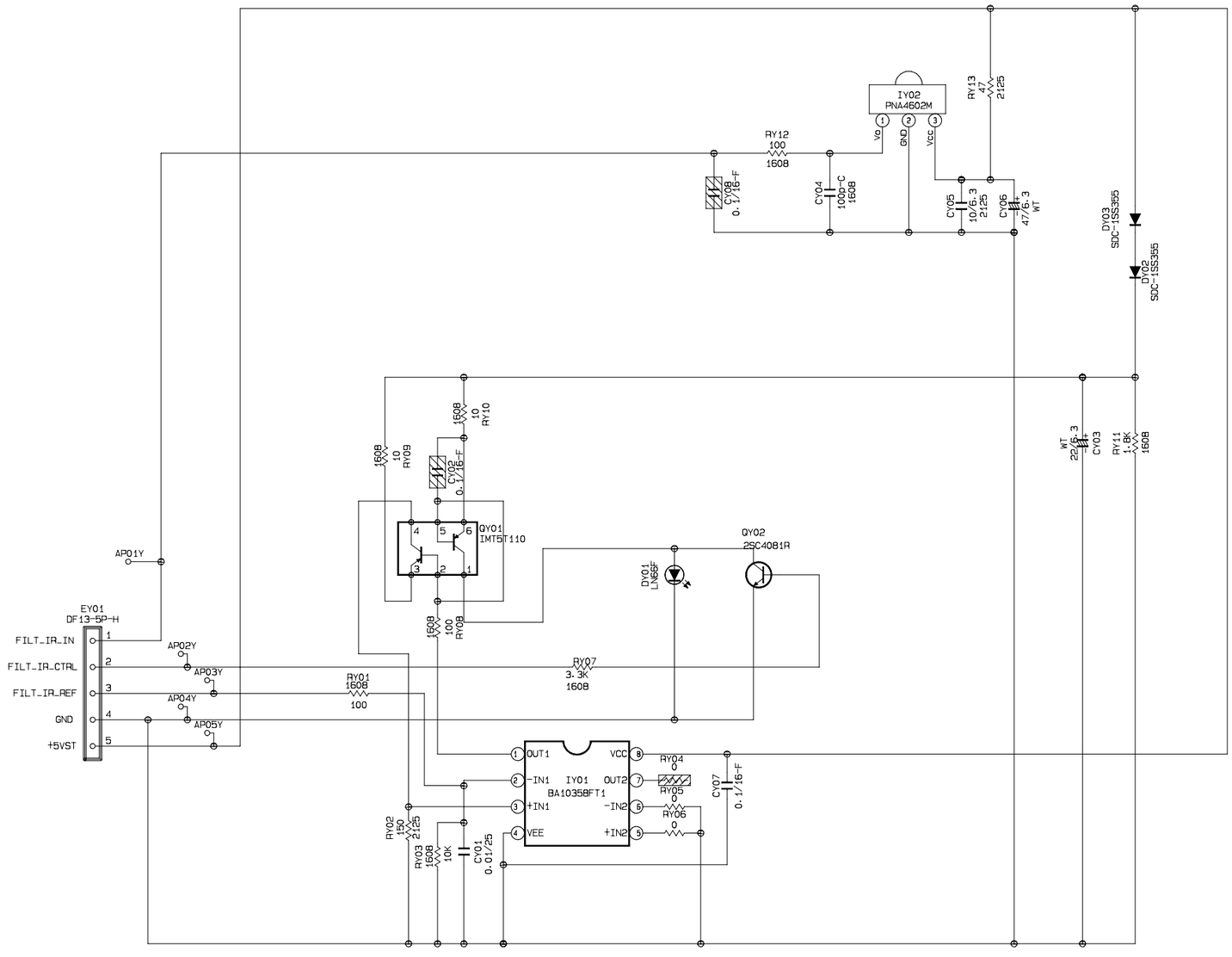
PWB assembly SIGNAL 1 (P5XLA/P5XMLA/P5XMLB)



confidential

PWB assembly SIGNAL 2 (P5XLA/P5XMLA/P5XMLB)

PWB assembly KEYPAD (P5XLA/P5XMLA/P5XMLB)



PWB assembly DUST SENSOR (P5XLA/P5XMLA/P5XMLB)

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